Hospital Progress

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St. Cloud Hospital, St. Cloud, Minn.

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THE new St. Cloud Hospital, like the four others in the history of the St. Cloud hospital service rendered by the Sisters of St. Benedict, fulfills a long-felt need. We are aware of the fact that the phrase "fulfills a long-felt need" has been branded as bromidic, but we use it deliberately, for around the two ideas of "fulfillment" and "need long felt" circles all that can be said concerning the magnificent new structure, and the four less imposing ones which have, since 1886, kept pace with the growing needs of the city of St. Cloud. The fact that there has never been in St. Cloud a hospital except those built and conducted by the Sisters is of peculiar interest, since St. Cloud has the largest percentage of Catholic population of any city in the United States.

The Demand for Hospital Service

Concerning the needs, progress spells itself into a mere catalog of the facts. A small brick building in 1886 with three beds was more than sufficient to care for the city's sick, until the cyclone of the same year, when the heroic devotion of the Sisters, under most trying circumstances, broke down all prejudice against care of the sick in hospitals. Long before the second hospital was built in 1889, this first structure had become too small.

In 1900, the site was changed and an excellent new building erected, which was enlarged twice, but for the past few years has still been inadequate. Since there is a large territory around St. Cloud from which patients may be drawn, it was deemed expedient to erect a hospital that would look to the future and be for many years a certain hospice for the sick of the city, and of the surrounding territory as well.

Planned for Expansion

The new St. Cloud Hospital stands as a monument of achievement, the final realization of many dreams and much practical planning. It is built on a 20-acre site of beautiful wooded land on the banks of the Mississippi, and overlooks the river at a point from where one may view a panorama of wooded bluffs stretching for miles up and down on the opposite shore. It is sufficiently removed from the manufacturing district of the city to insure clean, fresh air. Its equipment is the most up-to-date and complete that could be provided. In all respects, the new St. Cloud Hospital seems to be an ideal home for

WEST FRONT, ST. CLOUD HOSPITAL.
A harmony of all the colors of the spectrum—pink, brown, blue, bluish black, and purple native granite and textured brick.
Schmidt, Garden & Erikson, Architects.

the sick—"The fulfillment of a long-felt need"—a grand and imposing fulfillment indeed.

The site is not only beautifully located, but amply large for future development. What the future holds for St. Cloud Hospital, only time can tell, but considerable expansion is wisely provided for, should it be necessary. Two additional wings, a separate nurses' home, a convent, and other buildings for auxiliary purposes are included in the original plans; these may be constructed whenever their need is apparent. There has been no short-sighted planning. Everywhere the hospital has been builded on a broadly liberal scale.

A Beautiful Picture

The best time to see the building is on a brilliant October day, from the front or westerly side. The ruddy mass of the building is then enframed by a wine-red sash of the sumac on the far side of the Mississippi—the yellows of the maples, punctuated by the somber tones of the evergreen, the browns, and occasional green of the oaks, with a glimpse here and there of the dark band of the Mississippi; and above all, the limpid blue of a perfect day. Against this colorful background, we see the broad and simple outlines—the long, six-story portion (over 400 feet from tip to tip) broken into three sections those at either end bent toward the river, the central one topped by a seventh story; and, over all, the Cross. Against this broad bulk nestles the one-story entrance feature connected to the three-story wings on either side by an arcade. The low base of native granite, runs almost the entire range of the palette—grays, greens, blues, reds, putty. The reddish brick above gives a strongly pinkish cast to the entire wall surface. Yet, when this wall is closely examined, it is found that the brick varies in color from pink to a deep brown or bluish black, recalling and blending with the colorful granite base course. Emphasis is furnished where necessary by the sparing use of limestone.

MAIN ENTRANCE, ST. CLOUD HOSPITAL.
A notable example of modern hand-wrought iron and bronze founding

Modern in Design and Arrangement

The design is as modern as its interior arrangement—it is of the year 1928. Freakish innovations—so apt to be labeled modern—have been avoided. Simplicity and dignity of mass, the best use of materials, and attractive but sparing detail make an attractive foil for its rich setting.

After we pass the simple gateposts (with illuminated signs) marking the entrance drive, our eyes are caught and held by the rich embroidery of the gates of the main entrance, an embroidery hand wrought in Swedish iron, unpainted and rustless.

In the center of each door is a replica in bronze, by Gorham, of the medal cast to commemorate the 1,500th anniversary of the founding of the Order of St. Benedict. In the arch, the central motif is the coat of arms of St. Cloud or Clodoaldus, the St. Cloud for whom the city and the hospital are named. The fleur-de-lis or "lily of France" appears in this shield and is freely used as a decoration elsewhere in the hospital.

After passing through the marbled vestibule, we enter the lobby, a salle d'honeur, its marbled walls pierced by windows to the floor, through which one catches glimpses of a lovely paved garden. If it be summer, the soothing sounds of falling water in the fountains are heard. We see that these gardens are framed by the lobby on one side, the hospital itself on the second, the three-story projecting wings on the third, and, on the fourth side, by the open arcade.

A Friendly Lobby

Quiet and rich dignity—austere, perhaps, but yet benign is the keynote of the lobby. The walls are of warm limpid yellow polished Mansota marble, the floor of patterned terrazzo, boldly outlined by wide brass strips; the ceiling of molded plaster, colored to harmonize with the marble walls; radiators concealed behind bronze inclosures; the rich draperies at the windows, the deep-nap carpet under foot; the stately furniture, the interesting lamps, and lanterned fixtures promising a warm and welcome evening glow; the bronze elevator doors etched in geometric patterns and ecclesiastical emblems; bronze finish on the doors, and other trim, all serve toward one end, to create confidence and restfulness. The visitor and patient who enters these portals renews hope, gains courage and assurance. There are no signs of the hospital, no odors, no scurrying white garbed doctors or nurses, no

confusion, no haste, but instead unobstrusive restful charm.

At the far end we sight the first evidence that this is not, perhaps, such a home. It is the information desk opening directly into the business office. On the information counter is an electric doctors' register board with names of all doctors who enjoy the privilege of treating patients in the hospital. When they enter the hospital they register on this board, lighting up their names, making it easy to locate them to deliver messages and phone calls.

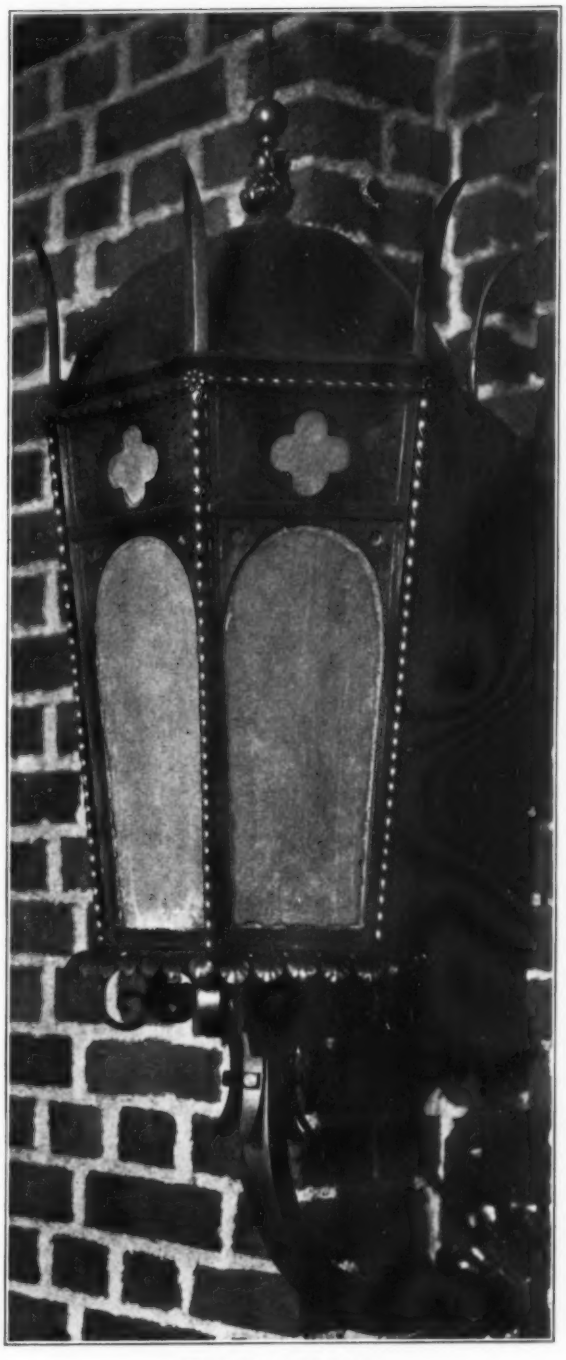
For Patients' Relatives

Directly opposite the information counter, a short hall leads to the two reception rooms. These two are attractively furnished. The goal, one which has never been lost sight of for a moment, is the care and comfort of the guests, the patient and visitor. These two reception rooms are an essential step toward that goal. It is sometimes necessary for families and friends to spend many an hour at the hospital. Often they endure moments of great anxiety. They cannot remain at the bedside, yet they wish to be nearby. In the public spaces they would be uncomfortably conspicuous. In these reception rooms they are at ease in quiet privacy.

Special Attention to Chapel

The best way to see the hospital and to grasp some idea of its plan and its magnitude will be to take one of the elevators to the seventh floor. Before doing so, we will first stop at the chapel.

It occupies the whole of the northerly wing on the entrance front. It is three stories in height and 40 x 80 ft. in area. It will comfortably seat about 350 on its main floor and two balconies. It may be reached from the outside through the northerly arcade or from any one of the three lower stories of the hospital. We will enter from the first-floor corridor. Directly opposite stands the marble altar, clothed in rich fitments, framed by the lofty vaulted sanctuary of warm grey brick and dark oak wainscoting. If we are fortunate we arrive just as the service begins. We find the marble altar flooded with a rich glow, a jewel sparkling against the dark background of the antique finished oak reredos. Over the altar is a sparkling glass mosaic picture. The altar and side altars are creamy yellow polished Mansota marble. The tabernacle is of bronze and above it all a beautifully carved St. Cloud of wood. The floor of the sanctuary and of the aisles is of honed-finish Kasota marble. The communion rail of polished Kasota marble is inlaid with varicolored foreign marbles. The richly wrought iron grilles conceal the radiation and the ventilation. The specially designed pews and confessionals are of quartered oak, fine and sturdy in texture, rich in color. The windows on either side are steel framed, set directly into the masonry. The attractively tinted antique glass is cut into a simple pattern by leaden cames. Shining brilliantly in these windows are richly colored medallions, ecclesiastically significant. The ceiling is of concrete, beamed and paneled, decorated in a cerulean blue with conventional gilded pattern glinting over it. The two balconies at the rear of the chapel are faced with ornamental staff, finished in old ivory. The bronze lighting fixtures, lanterns suspended from the ceiling, are reinforced by a subdued flood of light from the ceiling where a great cluster of lights is concealed behind panels of glass. As we face the sanctuary, we find the corner stone in the left corner. It is of polished Mansota with inserts of bronze on each face, one a replica of the medal commemorating the 1,500th anniversary of the founding of the Order, similar

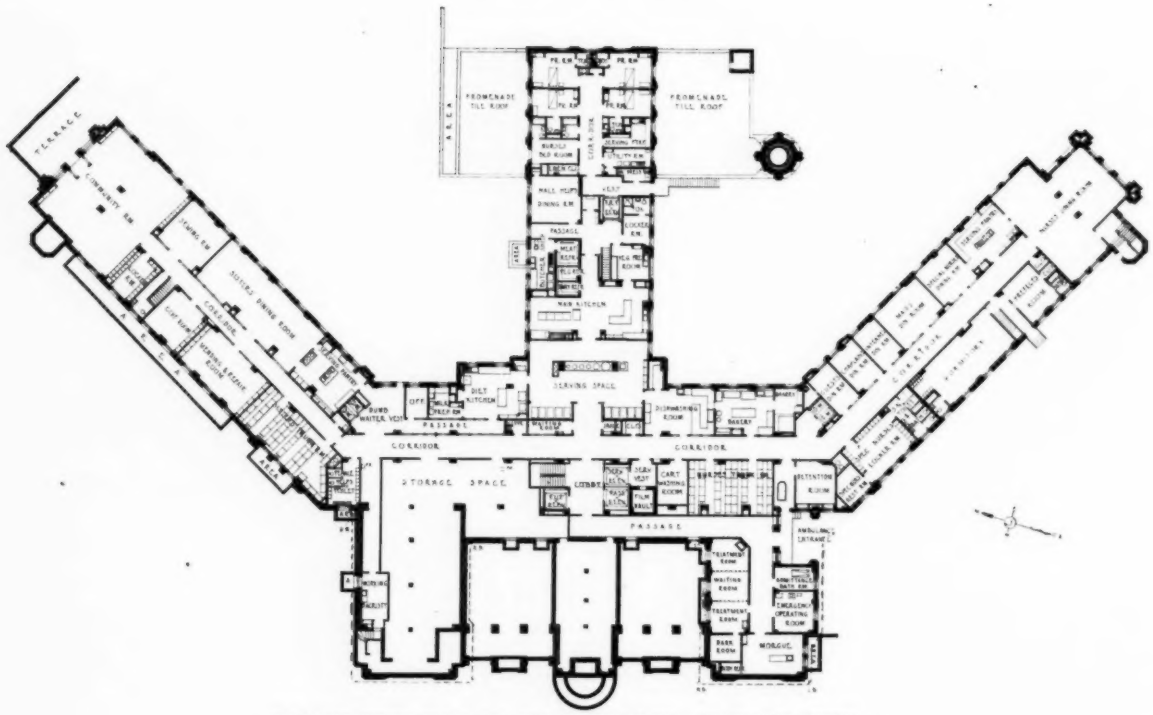


ST. CLOUD HOSPITAL.
Wrought-iron entrance lamps recall the hospitality of the medieval hospice

to the one on the entrance doors; the other two bearing the insignia of the Order. We leave the chapel regretfully. We might remain to study the symbolism of the detail but if we do we will tarry too long so we return to the elevators and are taken to the seventh floor. As we ride we learn that it is but one of the three elevators and that provision has been made for an additional one. In addition there are four power dumb waiters, each of them as large as a small elevator.

Solarium on Seventh Floor

When we get off at the seventh floor, we find that this floor is very much smaller than the others. A magni-



SUB-BASEMENT PLAN, ST. CLOUD HOSPITAL, ST. CLOUD, MINN.
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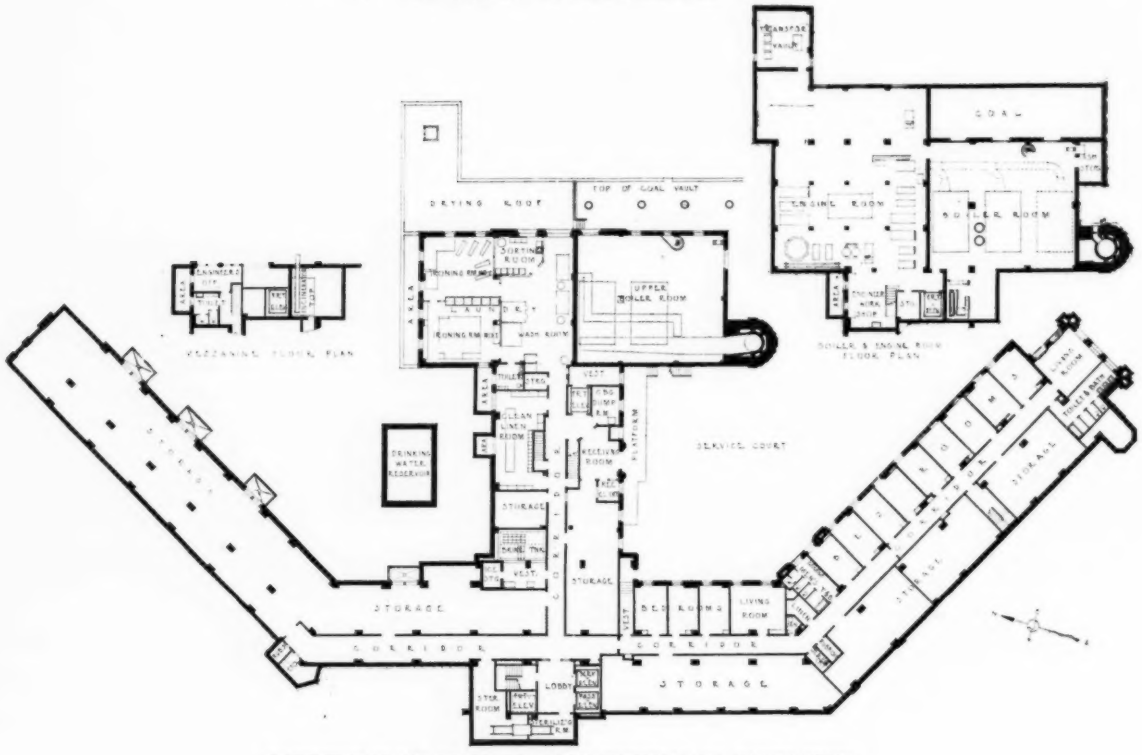


BASEMENT FLOOR PLAN, ST. CLOUD HOSPITAL, ST. CLOUD, MINN.
Schmidt, Garden & Erikson, Architects.

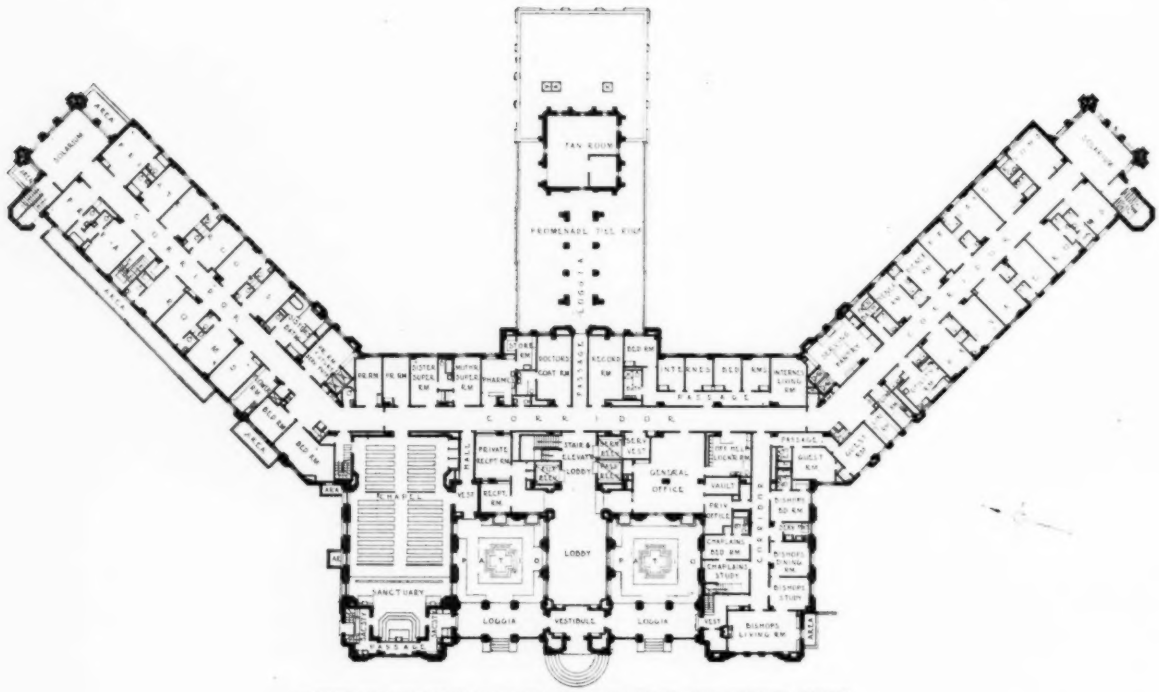
ficent solarium with a view up and down the river for miles occupies the east half. The west half includes a women's restroom and a smoking room for men. At either end are promenade roofs. This entire floor is largely for recreational purposes for those whose stay in the hospital is prolonged or for those convalescents that need a change, rest from familiar sights of their own room and floor.

The promenade roofs afford fine opportunities, too, to drink in the clear air and the vivid sunshine. Then too, these promenades may be used for heliotherapy, an increasingly important weapon in resisting certain types of diseases.

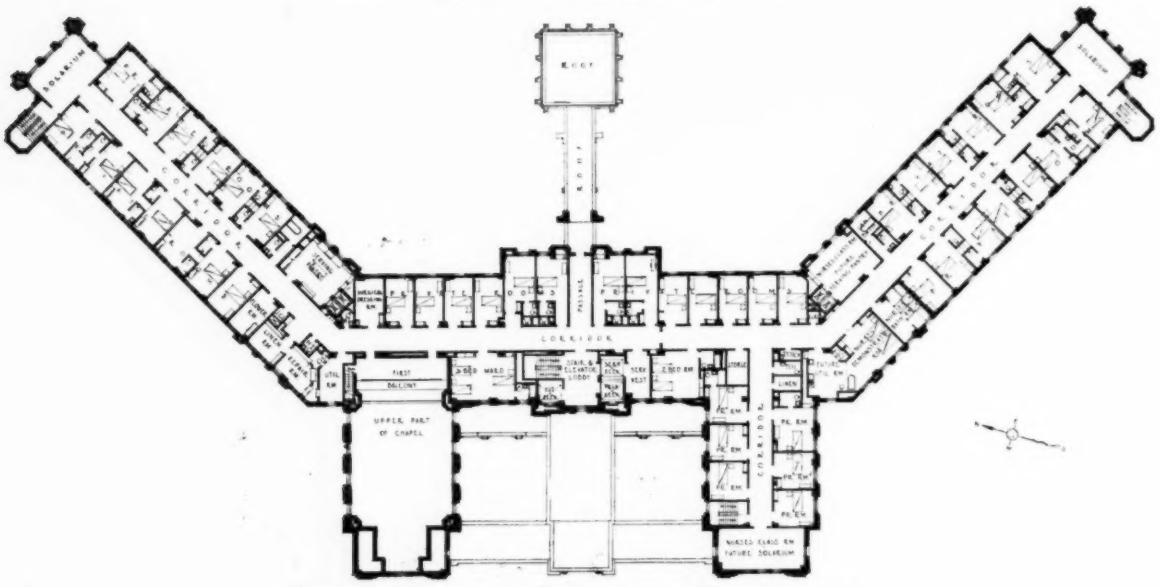
THE CHAPEL, ST. CLOUD HOSPITAL.

Warm colored face brick, marble altars, and mission finish white oak furnish a harmonious composition of color and form for St. Cloud Hospital Chapel.

A view from the Sanctuary of the chapel toward the entrance discloses the richness and symbolism of its plaster and color decoration, its decorated concrete ceiling, and its lighting fixtures.



FIRST FLOOR PLAN, ST. CLOUD HOSPITAL, ST. CLOUD, MINN.
Schmidt, Garden & Erikson, Architects.



SECOND FLOOR PLAN, ST. CLOUD HOSPITAL, ST. CLOUD, MINN.
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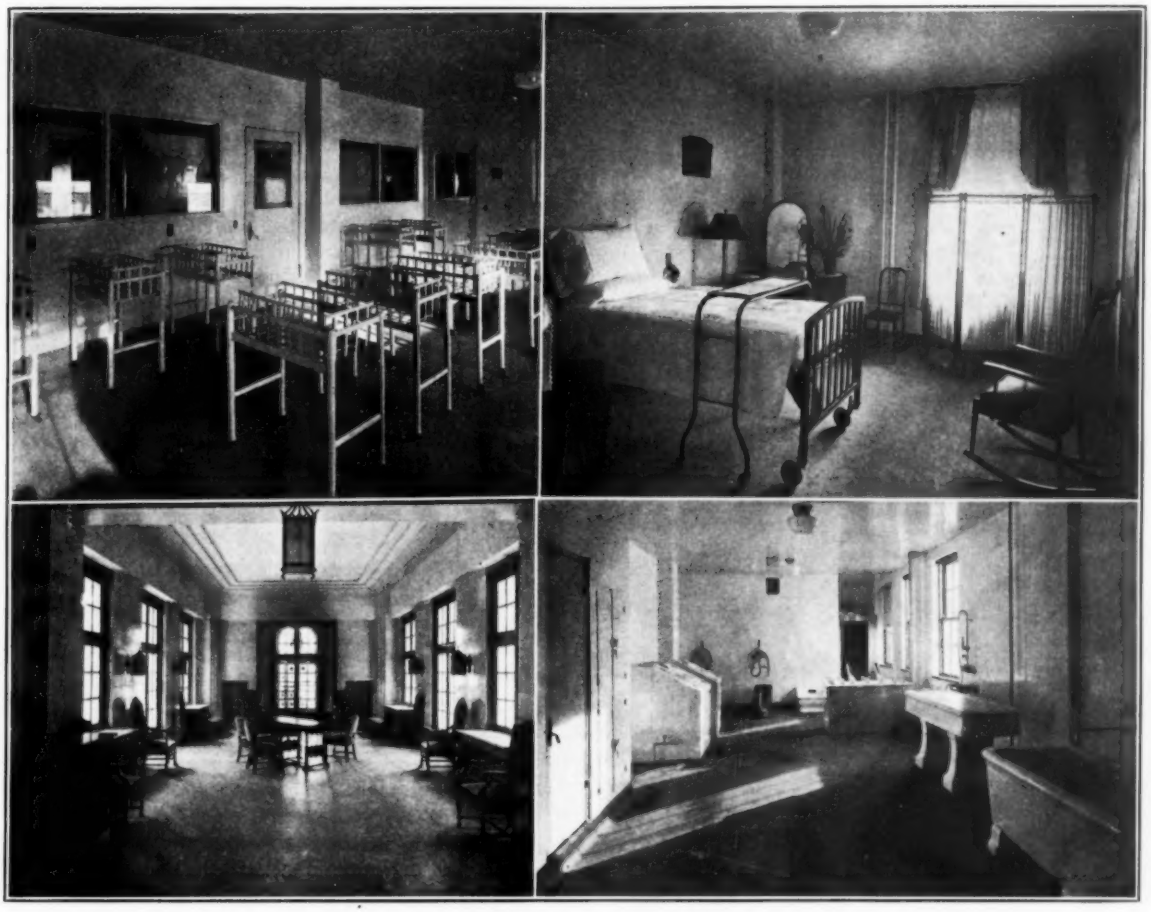
The General Plan

From the vantage points of one of these roofs, let us picture the plan or arrangement of the hospital. As we peer over the east parapet wall, we are facing the river. We see that the ground falls away rather sharply to the river. As we shall learn later, this difference in grade has been made an asset in planning the hospital. We notice that while the entrance front is but seven stories above grade, the river side is, in part, ten stories.

We find the portion on which we are standing is roughly parallel with the river but that at either end the building bends sharply toward the river, much as though the hospital were holding its arms aloft in a perpetual blessing of the river. But the river returns the blessing at once, for the hospital stands as it does so that as many of the patients as possible may benefit by the lovely view up and down the banks. As we look down we see a low central wing projecting toward the river. Its roof is level with the entrance floor of the hospital and at its eastern or river end, it spreads out still farther. All of this we learn is the service wing containing kitchen, laundry, engine, and boiler rooms. At the end rises the stack, not a utilitarian excrescence but a thing of beauty soaring aloft, proving, if it ever needed demonstration, that utility is not necessarily ugly. Turning our glance below again we see the service road passing the south end of the



INTERIOR VIEWS, ST. CLOUD HOSPITAL.

Upper Left: Nursery—Notwithstanding that the infants will be segregated and their audible complaints will be hushed by sound-absorbing walls, yet they will be on display. Lower Left: Reception Room—Marble-wainscoted lobby and high-windowed walls. Upper right: Private Room—Each private room is supplied with everything homelike, comfortable, restful, and beautiful. Lower Right: Hydrotherapeutic Room—The equipment here is unusually complete and efficiently placed.

building into the service yard in the southeasterly court. Here all the supplies are delivered.

Walking to the other side of the roof we see the entrance front, the drive, with the parking spaces directly in front of the main entrance. This is in the center wing of the three, projecting at right angles to the main hospital and is but one story high. The north wing is the chapel and matches in height and area the corresponding wing on the south side. South of this we see a road dipping down to the basement level—the ambulance entrance, conveniently but unobtrusively placed.

Large as a Skyscraper

Perhaps we get a better picture of the immensity of the structure here than anywhere else. If we are on the ground, we can see only a small portion of the building at any one time unless we get so far away that we lose much of the detail by which we unconsciously measure the building. Some dimensions may be of interest. From north to south, tip to tip, is approximately 400 ft.; from east to west is about 260 ft. The building would be badly crowded on an ordinary city block. It contains about 475 rooms. But some of these are so large that about 125 six-room houses would be as large in cubic contents as this hospital. If it had been possible or desirable to build a skyscraper, this building could be converted into one 175 ft. long and 40 ft. wide and 370 ft. high, allowing basements—a sizeable 28-story building.

The Medical-Service Floor

We will walk down a story to the sixth or medical-service floor. Here are concentrated the scientific workrooms, the operating, X-ray, laboratory, and physiotherapy departments; at the south end are the operating rooms, three rooms for major operations, one for minor, two for tonsils, one for eyes, one for septic cases, in all eight operating rooms. These with the necessary service rooms occupy nearly half of this floor. As we enter the department we pass, on the left, the surgeons' locker room with adjacent bathroom, restroom, and library. Next, is the nurses' workroom, where bandages, dressings, etc., are prepared and stored in the steel cases that line its walls. Then we have the main sterilizing room where high-pressure steam insures the sterility of all material used on the patient. This equipment is of the latest and best type, built into the wall. Adjoining this is a sterile supply room where the containers (or drums) in which the goods are sterilized may be stored until needed.

The operating rooms are literally a "word after the last" word. The large windows supply all the daylight that the day permits but if this fails, a constant source is to be found in the electric light. It is an interesting comment on the perfection of electric light to find that many of the most exacting surgeons prefer it to sunlight. To insure cleanliness and ease of cleaning, for here if ever "cleanliness is next to godliness," the operating rooms are wainscoted in green tile. Green, because this color has been found the most satisfactory "eye rest" for the surgeon when he lifts his eyes from the operating field.

Between each pair of the major rooms is a sterilizing room and a scrub-up room. The four larger operating rooms are at the end of the corridor. On the south side

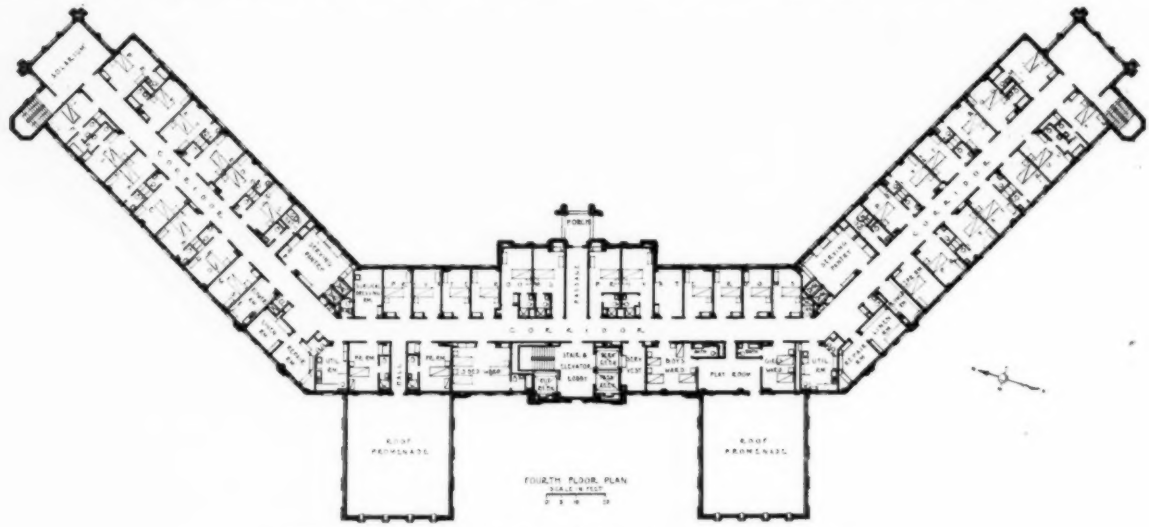
of the corridor are an instrument room, a utility room (for cleaning rubber gloves, instruments, etc.), and then rooms for anesthetizing the patients, for supplies, gas tanks, carts and locker and dressing rooms for Sisters and nurses.

Opposite the elevators is a staff meeting room. Here the staff holds those meetings and discussions which keep them all on the "qui vive," resulting in better medical service to the community.

Adjoining are the laboratories—three splendidly equipped rooms. Incubators where germs instead of chicks are hatched: Blues, but not the syncopated kind, used for staining smears from the incubators, and then the microscopes, magnifying the germs in all their wickedness. The centrifuge, a whirling dervish put to work, the chemical hood, where the nauseous odors of chemistry are harnessed to a purpose. All of this and the corps of workers are here that diagnosis may be confirmed or obscure conditions studied and clarified.

Adjoining is the metabolism room where the process of intake and output of the patient may be accurately measured. Next to it is the cardiograph, where a diagrammatic moving picture of the heart action is made—where every deviation from normal is infallibly recorded.

The northerly third of this floor is occupied by a comprehensive X-ray department. It is planned not only to



FOURTH FLOOR PLAN, ST. CLOUD HOSPITAL, ST. CLOUD, MINN.
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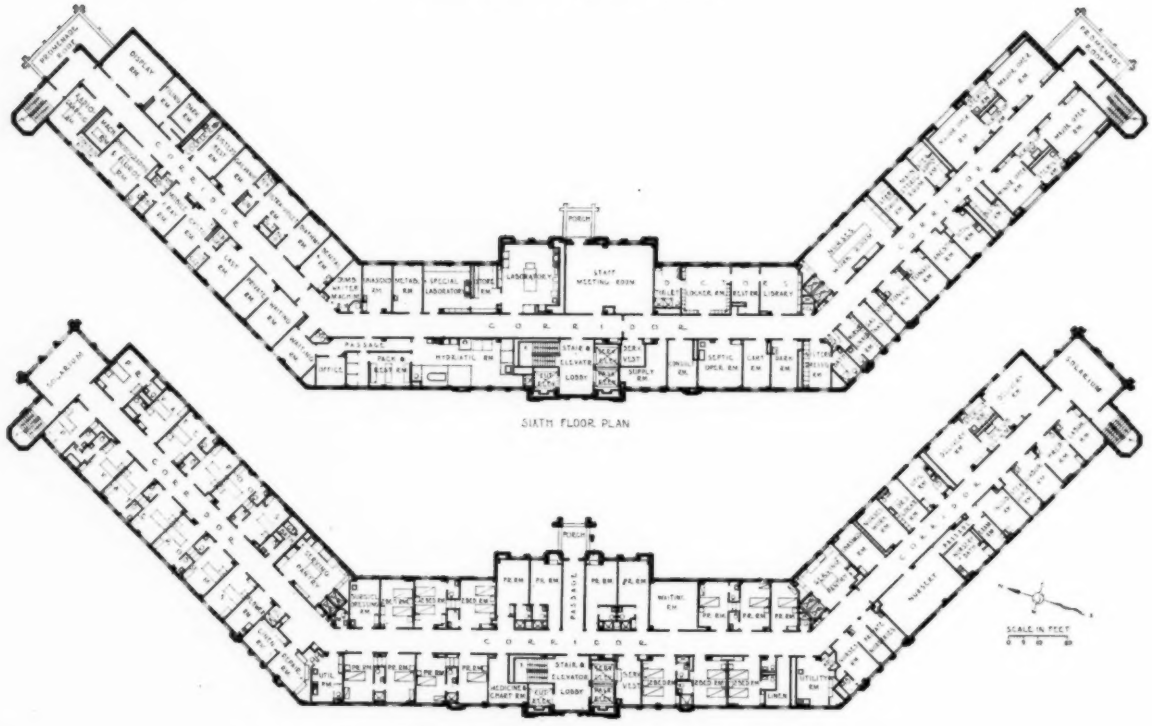


FIFTH AND SIXTH FLOOR PLANS, ST .CLOUD HOSPITAL, ST. CLOUD, MINN.
Schmidt, Garden & Erikson, Architects.

A SUN PARLOR, ST. CLOUD HOSPITAL.
There is a magnificent view from every one of the two or three sun parlors on each floor.

take care of the hospital patients, but to care for many people, not of the hospital, who need the diagnostic and treatment facilities of the X-ray and its auxiliaries. Here we find a dental room, fully equipped to do all work, with a small dental X-ray unit. Adjoining are three rooms for special forms of electricity, including the galvanic, ultra-violet, and diathermy. An elaborately equipped and excellently ventilated dark room, entered through a labyrinth or maze which permits anyone to enter this perfectly dark room without permitting light to enter and fog the sensitive plate, is nearby. A large filing room for storing the X-ray negatives, adjoins the dark room and the display or diagnostic room. In specially lighted cabinets in the diagnostic room, the pictures that are taken across the hall may be carefully studied and diagnosis made. Across the hall is a deep-therapy room with its great mechanism. Adjoining are rooms for fluroscopy and radiography. To complete the department, there are a number of small dressing rooms, a waiting room, and an office.

The balance of this sixth or medical-service floor is the hydrotherapeutic department.

The old-fashioned doctor was quite content to depend almost entirely upon drugs and surgery. Today, however, the means for combating disease have been widely extended. We find an elaborate shower where water of various temperatures and any pressure may be played upon the patient, the sitz bath, the perineal, and the continuous bath. There are electric-light cabinets in which perspiration is induced. There are packrooms where ice may be applied. Then, too, there are a massage table and various other appliances to relieve pains and aches, and human ailments of which these are symptomatic.

Modern Maternity Floor

On the fifth floor, we find quite a different subdivision of the space, for this is the topmost patient floor, devoted entirely to maternity. The southerly end—about one third of the floor—provides for an elaborate birth department and nursery. Here there are two delivery rooms, two labor rooms, and a preparation room; together with auxiliary rooms such as sterilizing, nurses' locker rooms, nurses' workrooms, supply room, etc. The birth or delivery rooms are quite properly as elaborately finished as the operating rooms we saw on the sixth floor.

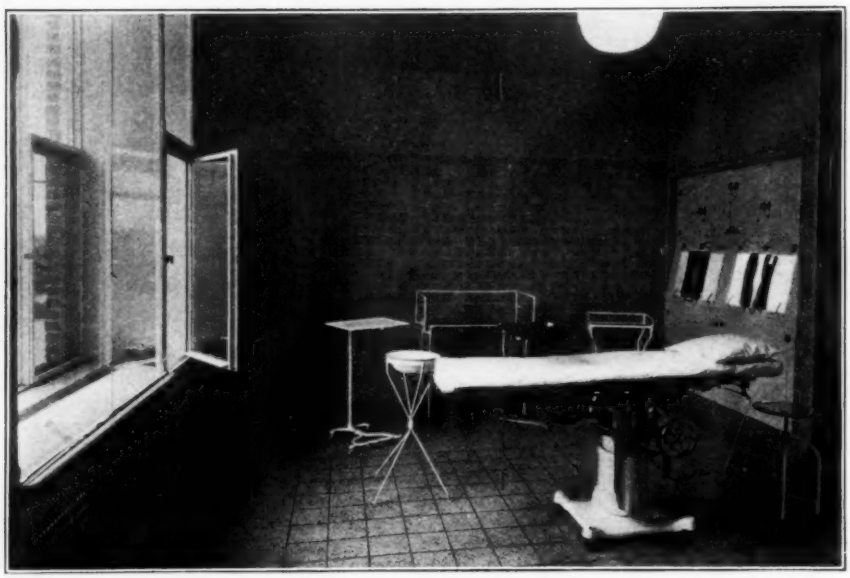
Adjoining the birth department are the nurseries, where the newborn infants will be cared for. There is a separate room for the premature babies, or for babies that may for some reason or other require the use of an incubator. There is a room where the doctor may examine the baby without disturbing or entering the main nursery. There is, too, a nursery workroom where the babies are bathed and otherwise cared for. For those babies that develop suspicious symptoms, there are two private or isolation nurseries—a safeguard to the other babies and to themselves.

As we leave the birth department, we pass on the right the first serving pantry. There are two of these on each floor centrally located with reference to the patients that they serve. Food is brought up by means of two large dumb-waiters, practically small freight elevators. The electrically heated carts are then plugged into outlets of the pantry, and the trays set up here. The large refrigerator, the sinks, and the built-in metal cases, all promise speedy and efficient service, resulting in hot food for the patients.

Modern Utility Service

Across the hall is our first utility room (there are two of these on each patients' floor). This might be termed a nurses' workroom. It is here that the nurses find the equipment and the material for the thousand and one things that they must do for the patients. Here, too, are the clothes and dust chutes. Both of these chutes are as sanitary as it is possible to make them; they deposit the soiled linen or the refuse from the floor at appropriate levels below. In each utility room is a heated cabinet for assuring hot blankets for the patient when needed—no need to wait. In the large metal cases the hot-water bottles and various pieces of similar equipment are kept constantly ready. This room has a white tile wainscoting.

Across the hall is a new form of janitor's closet, designed with a slop sink at the floor level. This permits the use of the scrubbing machine or the mop truck on



AN OPERATING ROOM, ST. CLOUD HOSPITAL.
Note the arrangements for illuminating X-ray films.

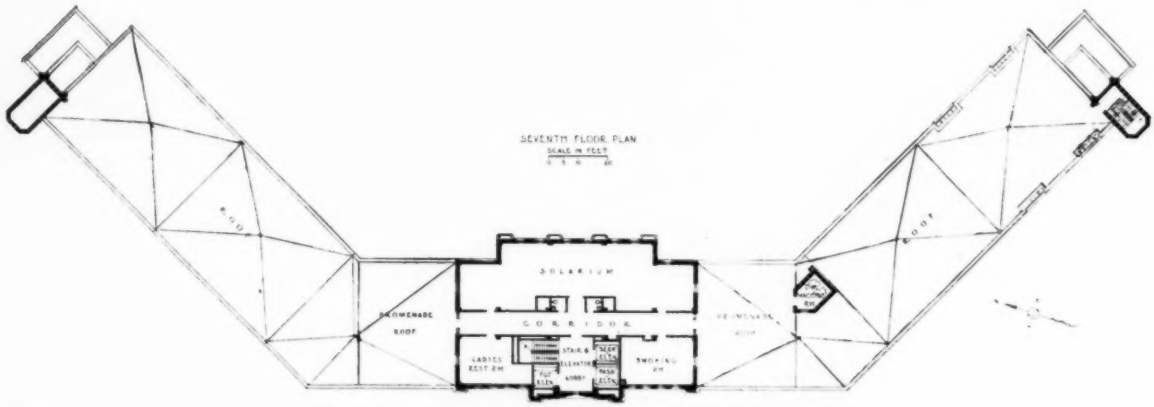
wheels, both labor-saving devices that are difficult to use with the ordinary type of slopsink. To assure cleanliness, this room is lined with terrazzo and is well ventilated. As an additional precaution in the care of maternity cases, practically every room on this floor has its own toilet.

Comfortable Private Rooms

When we examine one of the typical private rooms, we find it both spacious and airy. The floors are of light-colored terrazzo with a darker base, coved to meet the floor, making the cleaning easier. A metal wardrobe is built in, flush with the wall. The window stools are of marble—more expensive than wood, but are very real economy in operation. The radiators are set on high legs and well away from the wall to permit of cleaning. In addition to the simple ceiling fixture which is controlled by a switch at the door, we find a convenient plug at the bedside for the bedside lamp, examination light, or the fan. Directly above the bed, is a bracket light so that the patient need not be annoyed by a bright light in his eyes when lying in bed. A peculiar device near the baseboard attracts attention at once. It is something like the hooded light on the dashboard of an automobile, but very much larger. This is the night light. By means of this illumination, which may be left on all night, should the patient's condition require it, the nurse may enter the room without turning on any of the brighter lights of the room. If the patient be asleep, this light will not waken him; if he be awake, he will not suffer the discomforts of the bright light, except when absolutely necessary.

We find a pair of head phones in each room wall and learn that every patient in the building can be supplied with radio. What this means to those who must spend weeks in the hospital can only be imagined. This relief from thought of oneself and one's ailments hastens recovery in many cases.

At the bedside is also found the push button of the nurse's call system. When the patient pushes this button, it illuminates a light above the door, another one in the serving pantry, a third in the utility room, and a fourth at the nurse's station. This nurse's station, which we shall see later, is what might be termed the office of the floor nursing staff. If the nurse does not happen to be



SEVENTH FLOOR PLAN, ST. CLOUD HOSPITAL, ST. CLOUD, MINN.
Schmidt, Garden & Erikson, Architects.

at the station, the light burning in the pantry or utility room where she may be, will call her attention to the fact that a patient is calling and needs service. The light stays on until a nurse appears at the bedside and resets the call which turns out all of the lights. It cannot be reset at any other point. This form of nurse's call is insistent, ever on the job, and never noisy.

As we leave the room, we admire the large slab doors—without panels, to permit of easy cleaning. We note the peculiar low hardware. There is no knob, there is no keyhole on the inside. There is a hook on the door, and we learn that this hook has been provided so that a nurse can leave the room with her arms fully laden, as they often do, and yet open the door by hooking her forearm into this hook. The door check automatically closes the door behind her. Of course, from the corridor, only a push plate is needed. A lock is provided with a keyhole on the corridor side so that the rooms may be locked up when not in use.

A typical toilet room consists of a water closet and lavatory. The water-closet has a spout above it so arranged that bedpans can be cleansed and emptied into the water-closet. There are a few rooms with showers and some with baths.

Sound-Absorbing Walls

As we return to the corridor, we are impressed with its quietness. This is especially so if we have visited other new hospitals. The modern fireproof and sanitary construction is a perfect medium for reflecting sounds. A footstep at one end of the corridor is not only heard at the other end, but because of its reflection, may be actually louder. For years this condition was accepted as a necessary evil in order to provide a sanitary and fireproof hospital building. In this one, sound-absorbing material has been placed in the ceilings to absorb the noises. To judge how effective this treatment is one need only compare a corridor so treated with one untreated. This sound-absorbing material in the ceiling of the corridor prevents transmission of corridor noises and also noises passing from room to room. This same material has been used in the ceilings of all of the noise-producing areas, such as the serving pantry, utility rooms, nursery, birthroom, etc.

In many hospitals, there is little differentiation between the garbage can, and the visitor, and the patient. One is apt to meet ony one of them in the elevator lobbies or the elevators. In this one, a separate service elevator and an adjoining service vestibule has been provided. The passenger elevator is solely for passengers and patients, and the lobby which opens onto it is reserved in the same way.

Directly opposite the stair and elevator lobby is a passageway leading to an open-air porch for the magnificent view up and down the Mississippi. At the extreme end of the corridor are two large inclosed solariums, again with attractive views.

Each floor, including this one, is provided with a surgical-dressing room, wainscoted in tile.

Attractive Color Schemes

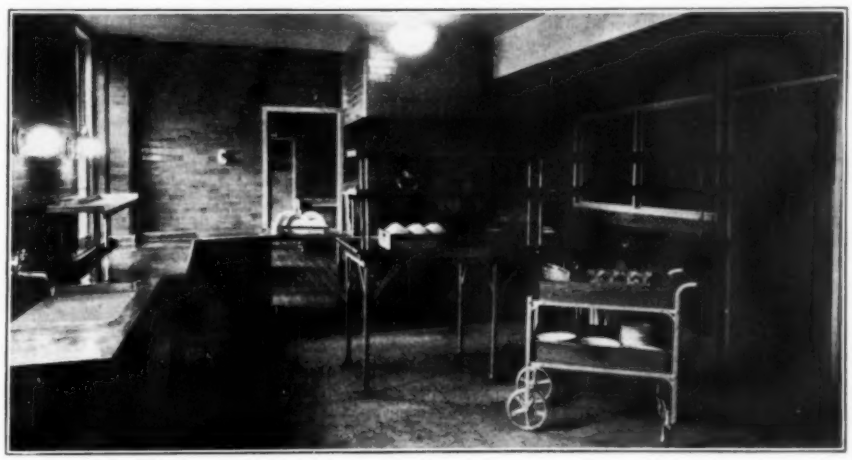
The nurses' station is an interesting place, for this is the nerve center of the floor. On all floors but the fifth, there are two such stations, but here where the number of patients has been reduced because of the space assigned to the birth department, only one is needed and provided. Grouped around this station, are the serving pantry, the flower room, the linen room, the repair room, and the utility room.

The colors used throughout the patients' rooms are french grays and straw colors. The corridors are painted a light gray with a dado seven feet high of mottled blue finish over the gray, and darker lines of gray at the base and around the trims.

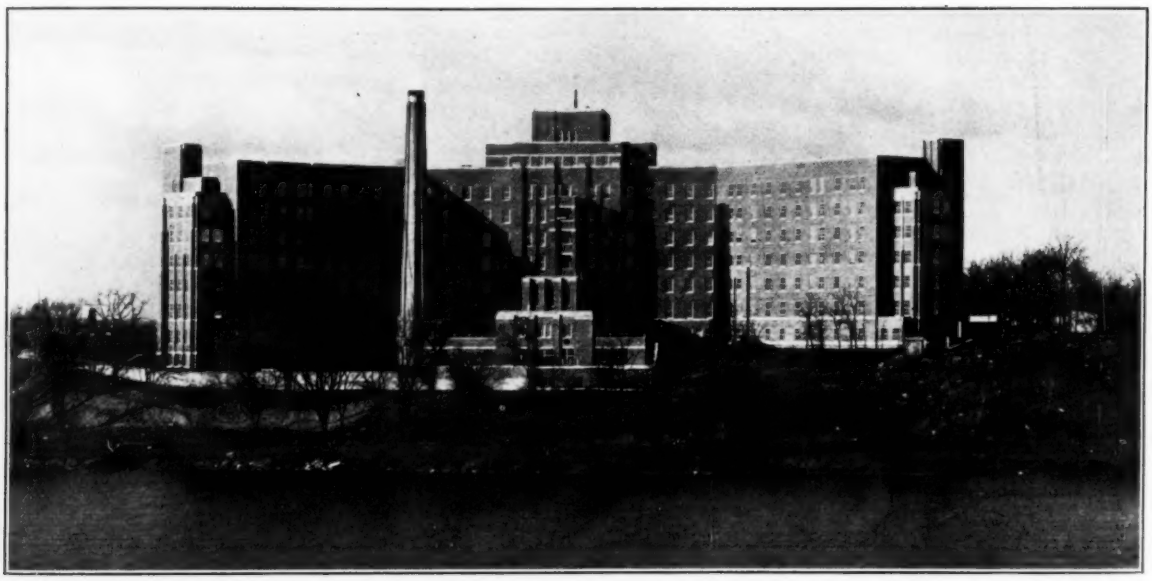
The fourth floor is very similar to the fifth, except that the space in the southerly wing given to the birth department on the fifth floor, is used on this floor for patient's rooms. In the middle of the westerly front, there is a small children's section with a boys' and girls' ward and playroom, with a roof opening from it, inclosed in wire mesh so that the children cannot climb over or endanger themselves. The corresponding room on the other side is used for similar purposes, but for adults.

The third floor is identical with the fourth, except that the upper part of the chapel is provided with a balcony which is directly connected to the patients' corridor—a convenience and comfort for the patient. The wing corresponding to the chapel on this floor is used for small private rooms.

The northerly end of the second floor is identical with the floor above, again providing access to the first balcony of the chapel. The southerly end is temporarily assigned for nurses' quarters, but eventually, it will be converted into patients' quarters and provisions have been



PART OF KITCHEN, ST. CLOUD HOSPITAL.
View shows dumb-waiters, service carts, etc.



EAST OR REAR VIEW, ST. CLOUD HOSPITAL.
The steep bank with the Mississippi at its foot, permits daylight boiler room, laundry, kitchens, store, and many other rooms.

made accordingly. Here we find the classrooms and the demonstration rooms where the girls are taught bedside procedure before being assigned to patient service.

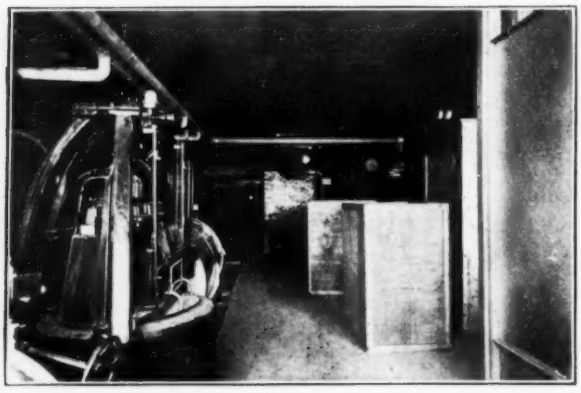
Interns Have "Apartment"

In the section beyond the chapel on the first floor are the Sisters' quarters. Again, they are arranged so that in the future they may be converted into patients' rooms. On the east side of the corridor of the central section, we find a fully equipped pharmacy, a doctors' cloakroom, toilets, the record room, and in a separate section, five bedrooms and a living room for interns. The southerly section of the building is again a patients' unit. In the wing corresponding to the chapel a suite has been provided for the bishop and for the chaplains.

Telephone in Each Room

The general office and private offices are arranged between the lobby and the southerly wing of the west front. In the general office we see the elaborate, but necessary telephone switchboard. In addition to the great number of telephones needed for the administration of such a great institution as this, telephones are provided for every patient's room.

In the first basement, the northerly wing is occupied by the Sisters' community room, dining room, etc.; the southeasterly wing by the dining room; the east wing by kitchens and a small isolation department; and the southwest wing by an admitting department. The space under the chapel and some other spaces are storage rooms.



LAUNDRY, ST. CLOUD HOSPITAL, ST. CLOUD, MINN.

The Sisters' community room occupies the extreme end of the building. From it opens an attractive and simple terrace, leading out into the Sisters' garden. Dining rooms, and other necessary adjuncts complete this department. One side of this wing is below the finished ground level, but the other side is well above it.

The other end has an attractive nurses' dining room, together with dining rooms for maids, special nurses, interns, chaplains, and guests. It also has a dormitory for some help and special nurses' locker rooms.

We now find that the incline, which we saw from the roof leading to the ambulance entrance, leads to a covered court into the southwest wing. Opening from this, is a passageway leading direct to the elevators and to a series of rooms for examination and admission of accident cases.

A Garage in the Kitchen

Kitchens finished in glazed brick are carefully arranged. The steam cooking equipment, the large ranges, the devices for mixing, the big refrigerators, the butcher shop, all emphasize what a task it is to feed from 300 to 400 people each day. A separate room is provided for dishwashing. A large bakery with all modern equipment is another interesting department. The diet kitchen where scientifically prepared diets are set up, is really not a kitchen but a laboratory, for laboratory precision is used here. Adjoining this is a milk-preparation room where the special formulas for the babies and children in the hospital are prepared under the best of conditions and with the most modern equipment. And then there is an office for the dietitian, the chief of this department. An interesting place is the food-cart garage—alcoves off the serving space of the kitchen. Here numerous electric connections are provided so that these food carts may be connected and heated for some time before they are needed for transporting the food.

Real Isolation

At the extreme eastern end, entirely cut off from the rest of the hospital, is an isolated section for contagious cases, consisting of four private rooms with necessary auxiliaries. It is reached from the outside by a separate

stairway and from the inside by the freight elevator at that point.

Receiving Room, Iceroom, Laundry

Dropping down another story, we find that the northerly portion of the building is entirely below grade, but that the service court is at grade level. Advantage has been taken of this fact to provide a series of help bedrooms in the southerly half of the building looking out on this court. Most of the space on this floor in the main portion of the building is for storage.

Opening from the service court is a large receiving room with an adjoining receiving office. A separate freight elevator is provided for the convenience of transporting the bulky articles to the kitchens above and to the engine room below. Nearby we find a garbage room to which the garbage cans are brought and emptied directly into an incinerator below. Here are facilities for cleaning and sterilizing the garbage cans. On this floor, is the ice-making room where, approximately 1,500 pounds of ice may be made per day. Adjoining, there are separate rooms for storing the ice.

At the end of this wing, is a linen room, and adjoining a laundry, consisting of a workroom, an ironing room, and a hand-ironing room. The washers are of Monel metal.

Engine and Boiler Rooms

Dropping down still another story, we find ourselves in the engine room. Here is a refrigerating machine which provides brine—the refrigerating medium—for all of the refrigerators throughout the hospital. Here are the house pumps and a host of other equipment needed to operate the hospital. A deep well is among its facilities, insuring pure and cool water for cooking and drinking. The switchboard in one corner of the engine room is an interesting feature.

We turn into the boiler room and see the two 300 h.p. boilers with their under-feed stokers. We begin to realize why such an enormous stack was necessary. Space has been left for a third boiler when the inevitable expansion takes place. The coal vaults provide storage for several hundred tons, immediately in front of the boilers. Trucks drive over the top of this vault and dump directly into it. Ashes are removed by conveyors to the trucks above.

Walls on Concrete Skeleton

As we pass through the lower portions of the building, we notice that the floor is of reinforced concrete supported on a concrete skeleton. The brick walls are carried on this skeleton just exactly as they are on a steel-constructed building. Of course, the building is fireproof throughout—as nearly fireproof as modern methods and materials permit.

As we stand again in the main-entrance lobby, we wonder whether we have seen and examined everything, but that is hopeless, unless we are prepared to spend a week or two in the building. For instance, there is the double glass in all the sash to counteract the severe winters. There are 1,000 windows, 1,300 doors, 800,000 face bricks, miles of pipe, and hundreds of miles of wiring.

Capacity of the Building

The building will care for 210 patients, and the nurseries for about 40 more, making a total of 250 beds in the hospital, without any crowding whatever. In moments of stress, the bed capacity can be increased to 350. There are 22 rooms for the female help, ten rooms for male help, and seven rooms for interns. Temporarily, the bed capacity is reduced by using 27 rooms for nurses and nineteen rooms for Sisters.

Details of Equipment

A complete description of every arrangement of the plan and items of equipment would be tiresome and only a brief mention will have to suffice, viz,:

The simple arrangement which transforms an ordinary double-hung window sash to a ventilating sash; the chambers inclosing sterilizing apparatus; quiet stair and elevator inclosures; safe and useful fire stairs; access shafts to piping; innumerable metal cabinets, cases and furniture of all kinds; the very important matter of complete separation of the various lines of hospital traffic without interference or annoyance. The lines of travel of an ambulance case, or food from the kitchen to a ward or a visitor from the entrance to a patient, soiled linen from the bedside to the laundry, and patients from room to operating or delivery room do not conflict. Obviously, many of these things can be appreciated only by visiting the hospital.

In the opinion of the architects, the high degree of perfection attained is largely due to the untiring efforts and continuous wholehearted cooperation of the Sisters and builders, especially of Rev. Mother M. Louisa, Sister M. Priscilla, Sister M. Julitta, and all the members of the building committee.

A CRIME IN MEXICO!

An Editorial Published in a Newspaper of Jefferson City, Missouri

Yesterday the people of Jefferson City had the privilege of visiting St. Mary's Hospital in the observance of National Hospital Day. Addresses were made by the Governor and the Mayor and a number of local physicians—faithful guardians of the public health. Every opportunity was given to the people to inspect the exceptional facilities of this local institution, which means so much to our community life. The visitors to the hospital were received by and made the guests of the Sisters of St. Mary, a religious order devoted to the service of humanity and relieving human suffering, with the caring for the unfortunate and the sick. Everyone coming into contact with their work praises them. We are the better for this institution and for the efforts, the sacrifices of these good Sisters.

Yet if Cole county were situated in the republic of Mexico these women would be held guilty of a crime in their service of the patients of this hospital, while wearing the simple garb of their order! A press dispatch from Torreon, Mexico, May 11, illustrates this most aptly: "Fourteen nuns were brought to Torreon today under military guard and are facing deportation from the country. The Nuns have been nurses in a hospital at San Pedro de las Colonias. That work has been construed by authorities as a violation of the regulations prohibiting religious orders."

Such deportations are of almost daily occurrence, and the United States has become the refuge of hundreds of the victims. Our government professes itself powerless, though we are resourceful enough when it comes to saving the oil properties of Tampico! We went to war with Spain because the colonial government of Cuba was oppressive. We are constantly concerned about the suffering of Armenia. We can land marines in Nicaragua to protect New York banking interests. We can cooperate in China with other powers. But we cannot even use moral suasion in Mexico to help bring about religious freedom—one of the cardinal doctrines of our political being. What a helpless folk we are!

Plan Tests for Radium Poison

Dr. A. O. Gottler, a New York toxicologist, plans two tests on the two victims of poison contracted while painting luminous watch dials, who have offered themselves for experiment.

"Surgery will be of no avail," says Dr. Gottler. "I would like to treat these women chemically to eliminate the radium. One treatment would be with bicarbonate of soda in increasing quantity to build up alkali in the system far above normal. The other would be with calcium lactate to speed up the normal change of bone structure. Whether these treatments would be successful is a guess."

Hospitals Old and New, Especially Old

Henry S. Spalding, S.J.

SOME time ago I attended a meeting of physicians in a large western city. Among the speakers was a doctor who talked on hospitals, old and new. I cannot recall the exact words of his introduction, but they were something like this: "Brother physicians, the talk which I have prepared for you tonight is about hospitals, old and new. I have very little to say about old hospitals for the simple reason that there were none, or they were very few. It was about the year—about the year 1869—1869 or 1870 that hospitals began to be built."

There was a long pause after the speaker had referred to 1869 as the year of the first hospitals. He could not decide between 1869 and 1870; but to one year or the other he gave the honor of the first attempt at hospital building. Now the present writer knew something of the hospitals of the Middle Ages and of the centuries that followed. I waited to see whether any of the hundred or more physicians present would contradict the statement of the speaker about the date of the first hospitals; but no one arose to take exception to the statement or to ask for an explanation.

When the meeting was over I sought an opportunity to speak with the doctor and to ask him whether he was sure of his dates.

"It was just after the Civil War," he reaffirmed, "but I am not sure whether it was 1869 or 1870."

What authority have you for the statement?" I asked.

"I have not looked up the books recently, but I am pretty sure that I am right in my assertion."

"Doctor," asked I, "did you ever hear of the Hospital of the Holy Ghost?"

"Is it a recent Catholic hospital?" he asked, for he recognized me as a Catholic priest.

"Not exactly recent," I answered, "a little over six hundred years old."

"Impossible, impossible," he replied with earnestness.

"Did you ever hear of the Hospital of Our Lady of Peace in Seville, in Spain?" I asked.

"I didn't know they had any hospitals in Spain."

"Well, doctor, this particular hospital in Spain is only one of hundreds. I am not sure how old it is, but about three hundred years ago it took care of 10,000 patients. It had a frontage of 600 feet and two wings with a depth of 500 feet. I would like to tell you something about the Spanish hospitals which at one time were the best in the world. But at least let me say a few words to you about the hospital which is 600 years old."

I then gave my listener a short account of the Hospital of the Holy Ghost in Rome.

The hospital of the Holy Ghost was built by Pope Innocent III, at the very beginning of the thirteenth century. It served the purpose of a hospital and a hotel, especially for pious pilgrims who came to visit the Holy City. But previous to this time there was a smaller building which was a hospice for English pilgrims and which traced its origin to King Ina of the West Saxons, who came to Rome in the year 728, to spend his last years in the Eternal City. It was no doubt insanitary and unscientific to use the same building for the sick and for the pilgrims. But this Hospital of the Holy Spirit was really several buildings under one management, and there was not the danger of infection and the inconvenience that would at first appear.

Here are a few facts about this old Hospital of the Holy Spirit. I have not the exact date for each statement, but the most recent is at the end of the eighteenth century or early in the nineteenth, and therefore long before the date which my friend, the doctor, assigned to the beginning of hospital buildings.

More than 300 years ago the hospital could accommodate 735 patients. Besides there were small wards for cases of infection. When a patient was received his clothes were put in a special room and marked with his name. When the patient recovered the clothes were returned. If the patient died the belongings were sold for the upkeep of the institution.

As early as 1471 this hospital was a structure of rather pretentious size, having a length of 430 feet and a depth of 42 feet. It was 46 feet high. Extending the full length of the building was a portico with a wall to protect the inmates while at the same time giving them a place to walk in the fresh air and sunshine. Although the hospital consisted of large wards, there were many separate quarters for those of noble birth and those who suffered from infectious diseases. While the large wards were not ideal in their arrangement, they were far from being like the low and depressing wards of the hospitals of our modern cities. These wards were built on the plan of a Gothic church, with high ceilings and an abundance of fresh air. But the high windows were so arranged that the patients were not exposed to drafts or sudden changes of temperature. The walls were decorated with works of art representing scenes from the New Testament, while daily Mass and devotions brought religious consolation to the sick.

Pope Sixtus IV (died 1484) enriched the hospital with an excellent pathological cabinet and a museum of anatomy. Valuable additions were made to this collection, among them an exhibit showing the marvels of the arterial, nervous and venous systems. In connection with the museum was a large library.

Early in the Nineteenth Centutry important improvements were made in the hospital. Baths were installed, stoves were substituted for the open fireplaces,

and special laboratory and surgical rooms were put into service. These rooms are described as large, bright, and airy. Clinic rooms were also in use, much after the plans of our modern clinics.

The beds were all made alike—of iron framework, with varnished boards and furnished with two mattresses, the lower one being of straw. They had a pillow, sheets, and a coverlet of light fabric for summer and two or three blankets for winter. At the foot of each bed was a tablet on which was accurately indicated by a system of marks, the condition of the patient, and the treatment he was receiving, as well as his diet. It was also noted whether he ought to receive Viaticum and whether he had received Extreme Unction. The food was distributed between 7 and 9 o'clock in the morning, and half-past two and half-past four in the afternoon. While meals were being served, the sick were entertained by the music of an organ.

With its large number of patients the hospital offered to doctors an excellent opportunity for practical work. Six physicians made two visits daily to the wards, each having an assistant whose duty closely resembled the work of the modern intern. For surgical work there was one chief surgeon with two assistants, and four sub-assistants. The pharmacy department was in care of a special official with six assistants; it furnished medicines not only for the hospital but for many of the smaller and special institutions of the city. The quantity and variety of medicines on hand were very large, and great exactness was observed in the filling of prescriptions and in the distribution of medicines.

The nursing was in the hands of men and women who gave their lives to the work of their chosen calling.

The spiritual needs of the patients were cared for by twelve Capuchin Fathers, who acted as chaplains and confessors. They lived in a separate house quite

HOSPITAL OF THE HOLY SPIRIT, ROME, ITALY.
The picture shows the hospital as it was 300 years ago. It was built by Pope Innocent III in the beginning of the Thirtenth Century.

The hospital furnished a bed garment of wool for use in winter and one of linen for summer, also a pair of sandals. Bed clothing was changed as occasion demanded without any restriction, and soiled mattresses were replaced immediately. In the spring, when the number of patients was small, the benches and chairs were scrubbed, and the woodwork varnished. To keep the air as fresh as possible there were ventilators, and acid disinfectants were used. The sanitary arrangements were further enhanced by a plentiful supply of water, which carried all waste to the Tiber. The floors, which were of stone, were swept daily and even oftener, and were mopped and washed at least once a month.

near the hospital. They celebrated Mass daily in each ward, and administered the Sacraments and assisted the dying. Moreover, every religious community in the city was required to send two confessors every month to assist in hearing confessions. In addition to this, there were zealous and devoted priests, like Saint John Baptist de Rossi, who, on their own initiative, devoted themselves to exercises of charity in the hospital. There were many pious associations for visiting the sick and burying the dead. Regular hours for visits of friends and relatives of the patients were arranged and strictly enforced.

In this short article I have called attention to but one of the many large hospitals which existed in Europe for hundreds of years.

My friend, the doctor, who made the assertion that hospital building began some years after the Civil War, was evidently confused in his dates. He had probably read of the low state of hospitals in many countries of Europe during the Seventeenth and Eighteenth, and in the early years of the Nineteenth Century, and of the later rapid progress in the building and management of these institutions; and had wrongly concluded that this movement for the betterment of hospitals was the beginning of the work. Even a glance at the article in the Catholic Encyclopedia will convince one that hospital work and hospital construction is almost coeval with Christianity.

Do You Wear Gloves?

Frank I. Ridge, M.D., St. Mary's Hospital, Kansas City, Mo.

ASK the surgeon this question and he will look askance at you, wondering no doubt whether to take the question seriously. Ask him why he wears gloves and he will tell you it is first for asepis and protection of the patient against infection, and then of course, there is the protection afforded the operator against infection, the loss of time, or perhaps even the loss of usefulness as a surgeon. We all know of surgeons and doctors who have lost fingers, hands, arms, and even life, due to infections, acquired at the operating table. The fingers, hands, and arms are necessities to the doctor. Without them he is useless. Their loss are physical losses and call forth the sympathy and pity of friends and acquaintances, but are not broadcasted and made a subject of conversation by the entire community.

The Result of Mistakes

But let a physician be sued in a civil court for alleged neglect, failure to remove drains, lack of knowledge of details, failure to avail himself of all the facilities at his disposal for complete diagnosis, and the damning evidence, whether substantiated or not is spread before the public by the lay press, and whether he is guilty or not, there will still lurk in the minds of many; yes even in the minds of some of his friends, a questionable suspicion as to his culpability. Such advertising even though proved false, lies dormant in the general knowledge of the community, and will always bring forth reminiscent conversation upon the subject, when this man's name is mentioned. It lies like a dry rot and eventually destroys that man's usefulness, even as does the loss of physical ability. And it does not call forth sympathy. His future is not that of a martyred hero, but that of one who has faded into obscurity, all except his one mistake.

Where, then, is the doctor to find protection for his reputation and integrity? Not in his own consciousness of having fully fulfilled his obligations to his patient; not in his own memory of details, for memory is fickle and conscience and memory are not tangible records to present before a jury. Juries are, as a rule, composed of rather literal folks, plus emotions, which naturally respond to harrowing tales of suffering due to neglect, forgotten implements and drains, mistakes in diagnosis, avoidable or unadvoidable. In summary, any jury understands pain, be it physical or mental, and will react to the recitation of agonies, as narrated by some enthusiastic orator of the legal profession who may hold the tenet that there is no such reaction as pain. These ethereals delight in such cases and seek them out with an instinct comparable only to that of a ferret.

Tangible Evidence Necessary

The doctor then must have tangible evidence to present. He must have visible proof of his attention, of his conclusions, be they right or wrong. None are infallible, and all that the law requires is that one exercises diligence and skill to the best of his ability in the performance of his duty. Hospitals have the same responsibility and have recognized the responsibility of the institution for the character of the work done within their walls. They require records, histories, physical examinations, laboratory examinations, preoperative observation, sponge count, instrument count, institutional infections, progress notes, tissue reports, operative technic, suture material used, anesthetic used, complete diagnosis, and the signature of the doctor responsible for the patient.

A doctor often strenuously objects to complying with these requirements. He looks upon them as an added burden, a foolish detail, a devisement of the devil to plague him and to allow some prying member of the record committee to exercise a personal animosity or pique. He knows what is the matter with his patient. He knows his reactions and his progress or decline. Why should he record his knowledge on paper with ink and make it a matter of public knowledge, to be indexed, to be catalogued, to become a matter of vital statistics? Why should some curious, impractical pathologist report upon the symptomatic appendix which the doctor removed? Why should the record committee care whether he buried the stump of an appendix or "removed it in the usual way? Why should they care whether a fracture was put up this way or that way? Why, anyway?

The Benefits of Records

Strange to relate, the "Whys" are almost invariably those who decry the mechanical methods of diagnosis. They rant and they rail against the folly of detail; never once pausing to consider the source of their own knowledge of medicine. In their educational days, there were no research laboratories; there was no experimenta-

tion; there were no foundations. They profited and learned by detailed notes, the clinical observations, the operative findings and the morgue findings of their predecessors, back to the time of Galen. Their knowledge was not the fruit of discoveries and conclusions locked within the retentive memories of their predecessors. They owe their *all* to the detailed and inscribed chronicles of past clinicians. Can they conscientiously say and act as if they thought they owed posterity nothing? Occasionally (perhaps?) knowledge inspired may spring from the fertility of one functioning brain. But as a rule, if traced to the end, will be found to be the correlation of the thoughts of many brains and the knowledge acquired from previous observations. Medicine and the healing art is not the result of individualism, it is the summation of the knowledge and experience of all followers. If we as doctors of the present, fulfill our obligation to the past, we must leave aggregate data for the future. Individualism is generally not progressive, but the experience gained by universal collaboration leads to further advance so we, as individuals, owe on our part our whole-hearted support in recording graphically and permanently our own impressions and conclusions. Then aside from our obligations to our calling, we owe it to our integrity, and to the protection of our own reputations to have a visible and chronological record of our diligence. We must show that we have a comprehensive grasp of the common knowledge available at the present time, and whether or not we agree with this or that tenet held by others, we cannot ignore them in our summary and decisions.

Some "Whys" Answered

Becoming practical, we ask: Why record the suture material used? Primarily, was it infected? Were there stitch abscesses? Sutures are supposed to be sterile. They are not always so. Then just which material is to blame, or is the infection due to faulty technic on the part of the operator.

Why family history, vital statistics, the correlation of inherited tendencies, cancer, tuberculosis, arteriosclerosis, etc.? This data has been bequeathed to us and still there is some diversity of opinion. Shall we fail in our duty when there are still problems to be solved?

Why past histories of tonsilitis, followed by rheumatic pains and then heart afflictions? This sequence was not discovered in any laboratory. It was the observation of recording clinicians.

Why record whether or not drains, instruments, sponges, and sutures were removed? Because there are recorded instances in which they were not removed and caused untold complications both to the patient and to the doctor.

Why preoperative observations? Because pneumonia and pleurisy patients have had their appendices removed. Tabetics and gastric crises have had their gall bladders removed and gastroenterostomy performed. Medical cases have been treated for gastric ulcers when they had chronic appendices. Medical cases have been treated for heart disease when they had surgical goiters.

Why blood count and Wasserman? The pathologist reports oxyuris worms in the appendix: The appendix is removed. The surgeon never looks at the blood count or else does not understand its significance. The eosinophile count is 10 per cent. The appendix should be removed, but is the patient cured? No, he is discharged still carrying his worms. The pathological report has not even been observed before the patient is discharged as cured. Was there a high blood count on this patient? There was not. Yet a good surgeon will work for months hiring assistants and clerks to prepare a study upon appendicitis and he, with all of his assistants, will totally ignore all blood counts. He never looks at the information given him by routine requirements. A physician treats a stubborn case of myocitis or muscular rheumatism for months, pulls teeth, removes tonsils, cultures prostate and urethra, when the patient on admission to the hospital had an eosinophile count of 16 per cent. He is discharged as "chronic" and the doctor has never looked at the routine blood count or thought of trichinosis. A patient is admitted and operated upon. The incision breaks down, the sutures won't hold. The Wasserman was four plus.

Why operative and cast detailed technic? Results differ in different hands, true: but the future doctor must know the methods which universally assure the greatest protection to his patient and produce the best results. His individuality must be developed by experience. "Appendix removed in the usual way" is no instructive lecture for future surgeons.

Attention to details leads to success. Disregard of details leaves a spoor that directs to incompetence. Detailed and chronological progress notes recording changing conditions are evidence of diligence, but "ditto" marks and "condition same" are signs indicative of laziness or ignorance and a callous disregard of a debt owed to both the patient and the medical profession.

Gloves Protecting Reputations

We owe it to ourselves to protect our reputation by complete records. We owe it to posterity to record our observations. We owe it to our patient of the present who may be the patient of someone else in the future, to detail the course, progress, operations, and results of the illness that is our present responsibility.

Keeping the records does not make the work of any hospital organization less arduous, nor does it decrease the expense of operation. To the contrary, it increases both, and these requirements are made and maintained as protection against incompetency; against carelessness, and against the liability of damage suits by unscrupulous and dissatisfied patients. They are the protecting gloves of reputation and must be used by all members constituting the nursing and medical profession.

Preventive Medicine

Edward F. Garesché, S.J.

WE hear a great deal about preventive medicine nowadays, but the thing itself is not so common as could be wished. It is all very well to speak about the need of preventive medicine, and its advantages, but how much real effort is made in our hospitals to foresee and prevent pathological conditions, compared to the immense effort made to cure conditions that have already developed? We all agree that an ounce of prevention is worth a pound of cure, in theory, but in practice our hospitals are administering many pounds of cure for every ounce of prevention.

Perhaps the chief reason for the difficulties we find in the practice of preventive medicine is human nature itself, which is always more prone to cure than to prevention. We see this same tendency in charitable work, which, until recent years has been much more active in relieving distresses than in keeping people from falling into distress. So, also, in medicine and surgery up to the present time, the energy has been spent chiefly in relieving conditions which have already grown acute, because people are much more apt to seek a cure and to go to efforts to obtain a cure, than they are to seek prevention, before the disease has become serious.

Human Nature

This tendency exists both in the patient and in the physician. The man who is merely threatened with a disease will sometimes do nothing at all to prevent it. Tell him unless he diets, he will develop some kidney trouble and he will not diet. Tell him that unless he takes exercise and fasts, he will develop fatty degeneration of the heart, and he will neither exercise nor fast, or he will refuse to do one or the other. But inform him that he has acute nephritis or diabetes and he will do anything you direct, because the fear of death or grievous disability stirs him to effort. In a similar way, a man may show symptoms of developing serious ulcerations of the stomach, but if he does not feel much discomfort and there is no immediate danger, he will go on living as before. But tell him that he has an ulcer which threatens perforation and that he may have a hemorrhage unless he takes measures to be cured, and he will fast, diet, have an operation, anything you choose, to save his precious life.

This attitude discourages the physician from his efforts at preventive medicine and he seeks an excuse by saying that it is no use to tell the people what to do to keep from getting sick, because they will not do it anyhow, so he waits for them to get sick enough to be obedient, and then tries to tell them what to do to get well. Meanwhile, however, the doctor himself is likely to feel much less interest in preventive medicine than in remedial procedures. He finds it much easier to diagnose a definite pathological condition than to hunt around for beginning ailments. Of course, there are some obvious tests that can be made at any time that will tend to show the beginning of disorders in the kidneys, and blood tests for sugar, are quite easily made. But when it comes to more difficult diagnosis, a good many doctors seem to take the attitude, at least in practice, that it is not worth while bothering with them, until the symptoms have become obvious enough to require curative measures.

This inertia, both of the prospective patient and of the physician, in regard to preventive diagnosis as well as preventive treatment, explains in great part why the application of preventive medicine in actual practice lags so far behind in theory. Again, the busy doctor often finds himself overworked in taking care of the acutely sick patients who appeal to him, and feels that he has no time nor energy left for taking care of people who do not yet really need a doctor, though they would profit very much from his services.

Cures are Easier

Finally, there is much more satisfaction in curing a person than in keeping him from getting sick, and though this is not a deliberate motive, of course, for a failure to practice preventive medicine, still it has its influence, especially on busy and overworked men. You may make great efforts to foresee and prevent a pathological condition, and there is nothing particularly gratifying about success. You are conscious of a negative rather than of a positive achievement. You have kept something from happening, which might not have happened in any event. But when you find a man drifting into the shadows of death, and, by your fidelity and skill, help him up again into the sunlight of health and vigor, there is something fine and gratifying in the achievement. One might add that preventive medicine is more difficult in many regards than curative medicine. It requires more effort for its success, and a longer patience to get results. With all these reasons in disfavor of preventive medicine, there is no wonder that it languishes somewhat at the present time.

In the domain of surgery, much the same reflections hold. The surgeon, conscious of his power, feels a certain noble satisfaction in the exercise of his skill. He can save lives by the score through skillful operations. He remarks with satisfaction how prompt and efficacious is the intervention of surgery to relieve what seem to be desperate conditions. There is something wonderful about the quick recoveries that follow skillful surgical intervention. The patient comes to the hospital in a suffering dangerous state. He is quickly prepared for an operation. There is a skillful exercise of the surgeon's expert technic, the patient makes a quick recovery and in many cases the disease is over for good and cannot recur again because the organ itself, which was its seat, is gone.

Compare this process with the tedious and obscure diagnosis of a condition which is not yet pathological, but will lead to a pathological condition, which requires long treatment and a careful régime on the part of the patient, and which, after all, may not be particularly successful. Add to this that the methods of what we might call preventive diagnosis are much more difficult and have not been nearly as much developed as the methods of diagnosis to determine a pathological condition already existing, these reflections give a sufficient explanation of the fact that it is far more common in our time to let people go on to the point where they need an operation and then cure them with a knife, than to detect the beginning of their disease and take measures to prevent it.

More Prevention Today

Of course, far more preventive medicine is really being practiced today than was ever the case in any previous age. Clinics, dispensaries, hospitals are all much more on the alert for signs of the beginning of a disease and much more active in prevention, than was the case even a decade ago. Health articles in the papers and the advertisements of establishments which specialize in periodical health examinations, have all stirred up a real interest in preventive medicine, and quite a few persons seek advice at the first premonition of a disease and in time to prevent its onset. But much more remains to be done, if we are to do our full duty in this regard and especially in the hospitals. It is here that one out of every ten of all the people of the country come each year, and besides the acute conditions from which they seek relief, these ten millions of patients yearly have a great number of incipient pathological conditions, unknown to themselves, but which could be remedied and thus prevented from further developing by the alertness and skill of the hospital staff.

Health Talks in Hospitals

Then, too, let us allude once more to a greatly neglected possibility in hospitals, that of gathering together the friends and former patients of the hospital to hear talks on health, on preventive hygiene and on the necessity of periodical health examinations for those especially who have reached middle age. Our hospitals have every facility for this public service. They have auditoriums, which are, for the most part, idle in many cases, but which could be filled several nights in the week by an interesting and appreciative audience. They have competent members of the medical and nursing staff who would be able and willing to give such help. Besides the benefit to the public, this service would also redound to the good of the hospitals themselves, which would thus become favorably known as public-spirited institutions.

The doctors and the nurses would also profit a great deal, especially the younger ones, from the preparation and delivery of such talks. One learns by teaching, and the presentation of this material in a popular style would be a helpful preparation for giving individual patients suggestions as to how to live. To speak to the public in a vigorous way about preventive medicine, hygiene, the laws of living and similar topics would bring them home more vividly to the hospital staff. The convalescents should also come to these talks; they would thus be taught how to live after their discharge from the hospital.

Topics for such talks are easily found. Those physicians who conduct daily syndicated health talks in the newspapers contrive to find three hundred and sixty five subjects a year to talk about and they keep it up year after year, so that some of them have already prepared thousands of such disquisitions. Talks to mothers on child care and the child feeding, talks on the family food and balanced diet, talks on exercise and fresh air, on the therapeutic value of sunlight, on bathing, massage, hot and cold applications, and all the means that can be used at home, to prevent disease, will give an abundance of material for many such talks.

If it were made known that these health talks would be given regularly on a certain evening each week, at a certain time, in the hospital auditorium, the people would get in the habit of attending at least from time to time, and would remember when and where the talks are to be given. Programs could be announced in the newspapers and this would be an ethical means of making known the public spirit of the hospital. Seasonal talks could be given on the diseases to be guarded against at each season, and the methods to be used. Special topics could be treated by request.

We trust these thoughts will be useful and helpful to our hospitals. Preventive medicine is of such increasing importance and of such special character that we shall all do well to encourage it in every reasonable way.

In Memory of Jane Archer Delamo

The following was sung by the senior glee club of St. Francis Hospital, Hartford, Conn., at a mass meeting of the Red Cross.

A mem'ry bright brings us here tonight
To think, to praise, to grieve
As we tell of the Red Cross Leader Nurse,
Our tribute of love we weave.
Her great heart now is stilled for aye,
But its deeds can perish never
In our U. S. A. and in other lands
Her name will live forever.

Your name is known both far and near,
Wherever need was found;
And from sunny France to Russia drear,
Are hearts e'er to you bound.
Now you sleep 'neath Arlington's sod,
Our brave, our vanished one
But we know you've heard from the Master's lips,
"Come home! You have well done."

Chorus

Ah, we her mem'ry cherish, And in our lives we'll show
All that this noble heart taught us in her life here below
Angel to all in suff'ring, Lead us, who, day by day,
Strive to be nurses as faithful as you, into your shining way.
Yes, lead us, day by day, Into your shining way.

—Sr. Mary Carmella.

Hospital Progress

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THE HIGHER STANDARDIZATION

Thanks to the efforts to standardize hospital activities for the patient, there has been a very great improvement in physical care of the sick. Laboratories, staff meetings, records, are well attended to, with far more care than in former years, and the work of our hospitals has grown proportionately better. Now the more enlightened and forward looking of hospital workers are thinking and speaking of other advances that ought to be made in hospital work. It may be more difficult and require a longer time to introduce these than it has taken to introduce the other advances, for they have to do in great measure not so much with material conditions as with intellectual and spiritual values.

Certainly the standards of our hospitals ought to be raised in what concerns the mental care of their patients. Some hospitals have already responded to the many suggestions made of supervision over the patient's reading and care for the patient's mental state. But it is only too common still to find hospitals where everything is done for the feeding of the body and the care of the body and little or nothing for the care of the mind. Anyone who has had any hospital experience knows what a help good reading is to the patient to while away the tedious hours of sickness or to cheer up the long reaches of convalescence. A bright, interesting book with some inspiration as well as cheer in its pages acts as a tonic and lifts up the spirit, jaded and weary with suffering.

But in order to supply this sort of mental and spiritual help for the patients, real work and self sacrifice is required on the part of the hospital workers. It is not practicable to trust to the haphazard gifts of benefactors to supply the right sort of reading for hospital patients. Some care and the expenditure of a fair amount of money are required to equip the hospital with books of the proper kind. Until our hospital directors all realize this and act on it, we can scarcely boast of a very high standard of hospital achievement in the care of the patient's mind.—*E.F.G.*

TOO MANY NURSES

The answers to the questionary sent out by the Grading Committee seem to show that there are far more nurses in some quarters of the country than are needed for the nursing needs of the population. Thus, out of nearly two hundred registries of nurses which were requested to send information as to the supply of nurses in their locality, only about a dozen replied that they needed more nurses. The rest unanimously objected that there were too many nurses in the city already, and that they had not enough work for them, and strongly opposed the idea of sending any more.

This matter ought to be a subject of serious thought for our nursing educators. This year nearly 18,000 young graduates will emerge from the schools of nursing. Some of them have taken college courses before entering the schools. A great many of them, perhaps the larger number, have finished their high-school course before studying nursing. Some of these young people are doomed to disappointment. They will find that there is not enough work to go around, and, if they are not specially qualified, they may experience such a lack of employment that, as some of the registries report, they may be half starved while waiting for cases.

On the other hand it will probably always remain true, in spite of the increasing number of graduates, that there is plenty of room at the top of the nursing profession. When there is question of finding some specially qualified nurse for some particularly important position, then it is almost an invariable experience that this highly qualified nurse is difficult to find. Despite the number of nurses who have received their training in good schools, the nurse who has particular qualifications will always find herself sought after and employed.

Of course, this points to the fact that those who are responsible for the education of nurses ought to call their attention to the great need of special preparation if they wish to find themselves in an advantageous position in their profession, and they should aspire to this advantageous position not only for their personal interest, but even more for the sake of the patients whom they are to serve. The reason why specially qualified nurses are sought after is because their services are so much more valuable. Thus, from the standpoint of the nurse and of her patient, better and better training, and more and more special preparation ought to be the watchword.—*E.F.G.*

NOISE

It is early morning in the hospital. Many of the patients are drowsily finishing out their fitful night's sleep, or perhaps some of them have fallen into slumber at last, after tossing about for many hours. This early morning rest is important for them. But, alas, the cleaners' and scrubbers' brigade starts its work. Slam! bang! clang! go the metal buckets against the floors. The more nervous patients jump at the clamor. Why in the world, they think, do they let people make noise like that in the hospitals in the early morning? Are there not any noiseless buckets made out of pressed paper or some other material that will not make such a clatter against the floors.

The morning wears on. The doctors begin their visits. Some of them have gentle, modulated voices which sooth the nerves of the sick. But here comes a rising young practitioner with vocal organs that would be a priceless possession for a fish vendor. He talks loud and deep. His voice penetrates to distant rooms

and jars the nerves of sensitive patients. He gives the nurses directions in a stentorian tone, as if to acquaint everyone within a wide radius that he is in charge. More noise, unnecessary noise in the hospital.

The day wears on, the doctors have mostly departed, but at one end of the corridor a group of nurses are gathered, talking and laughing over some recent occurence. Their shrill voices and their shriller laughter cut the air with disagreeable incisiveness. The poor woman in the room three doors away, who has a splitting headache and frayed nerves, thinks to herself that she could be reasonably happy if only those shrill noises would stop in the corridor. More noise in the hospital.

Poetic justice would require that these slam-bangers of pails, these stentorian talkers, these shrill chatterers and laughers in the hospital should themselves be brought low and have to listen to other people's noisy procedure. What a difference of attitude there would be, to be sure. "Why in the world cannot they keep this hospital quiet? How can a person be expected to rest and to sleep?"

These reflections will really be helpful to everyone who has to work in the hospital. The one great need of some patients is rest and peace. Medicines will do them very little good, but the recuperative powers of nature, if they are allowed to have their way, will help them and cure them. Give those powers a chance, by keeping everything in the hospital as quiet and as peaceful as possible.—*E.F.G.*

WHAT DOES IT MEAN?

When a community of Catholic Sisters comes to take charge of a hospital, what is the meaning of that event in the life of the city to which they come? It is difficult to answer this question in brief compass. Suppose a group of 20 or 30 trained nurses, experienced and competent, were to come to the municipal authorities and to say, "We have made our studies in nursing and in hospital management, one of us is a skilled laboratory technician, another an X-ray expert, another a competent superintendent of the whole hospital, and so on. We could gain good salaries elsewhere, and have many opportunities of employment, and of service, but we wish to dedicate our lives to the sick and unfortunate of this city. We pledge ourselves to work without money and without return except only the food, clothing, and lodging necessary for us in the performance of our tasks. We pledge a lifelong loyalty to the sick and the distressed. We give up, for their sake, homes of our own and all private interests. We will remain at our tasks, and strive to advance constantly in efficiency and skill from year to year."

Such an offer, from such a group of trained and devoted women, would rightly be regarded as one of the rarest pieces of good hap that had ever befallen the city. Indeed, in the whole history of our country, we know of no such offer, made by any group save by a Sisterhood, whose religious motives were strong enough to perpetuate such a sacrifice. But when the Sisters take charge of a hospital, they bring even more. They carry with them the guarantee of their community that the work of the hospital will be carried on by other and yet other groups, who are to come to take the place of the ones who fall out, worn out in their duties or by the passage of years. The motive which prompts their service is that most enduring, the most heavenly, and trustworthy motive of the love of Christ and of His afflicted brethern for His sake. They bring, to the city which they come to serve, an influence and a guarantee of care and healing, both for the body and the spirit, which extend to all classes and degrees of the people without distinction of creed or nation in universal brotherhood. These are some of the things which the advent of a community of hospital Sisters means to the city where they come to dwell.—*E.F.G.*

THE CATHOLIC MEDICAL MISSIONS

The past six months have been the most successful and encouraging in all the brief history of the Catholic Medical Mission Board. During that time a constant increase in interest and helpfulness has been noted among hospitals, doctors, and nurses and the general Catholic public have given more and more generously to the work. At the same time, more and more requests have come in from the mission field and larger numbers of supplies have been sent out to various quarters of the world.

During the coming year the Board will support three native doctors in China, graduates of the Catholic Medical School of the University of L'Aurore in Shanghai. It will also defray the personal expenses of Dr. Johanna Lyons of the Catholic Medical Missionaries who is working in their new hospital at Rajah Pindi in India. It will also continue to maintain Miss James, the faithful nurse whose services in Porto Rico have been so effective during the past few years for the welfare of souls as well as of bodies. Meanwhile an internship is being secured in an American hospital for a Filipino doctor, very well qualified, who wishes to make an internship in one of our hospitals and then to return to the Philippines to take up the work of the Catholic medical missions there.

All this is very encouraging, but it only faintly foreshadows what work the Medical Mission Board can do when our hospitals really grow interested as a group and do their part to promote this most blessed and needed undertaking. The field is almost endless in its possibilities, and the little which has already been done for Catholic medical missions only serves to point out how much remains to be done. Our faith assures us that to participate in works such as this is an inestimable personal advantage. It would be sad if Catholic hospital workers should overlook this opportunity while the swift days run by and take away with them a precious part of each individual's personal cooperation.—*E.F.G.*

Administration of Hospital Finance: The Factors

M. R. Kneifl, B.S., Lecturer in Accounting, Marquette University

IN the April issue of HOSPITAL PROGRESS, there appeared a "Suggested Plan for Financial Structure for the Modern Hospital or Special Hospital." The purpose of this suggestion was to establish firmly in the minds of superintendents and other members of the hospital personnel, the fact that definite procedure should be followed in the financial analysis of the individual hospital, as much so as in a commercial enterprise.

No doubt, some readers on further reflection, have found that such a plan is impossible of application to their institutions. This is to be expected, for the reason that no one plan of procedure can be set forth as applicable, in a particular way, to each and every hospital. This suggestion, therefore, for application in any hospital, should be subject to whatever degree of variation and limitation the service and facilities of the individual hospital may indicate. This is brought rather forcibly to mind when we consider the special hospital. Its service is designed to serve a special class of cases; every facility, then, on a large or small scale, exists in such a hospital for the sole purpose of contributing to this specialized service; many other facilities found in general hospitals are not, accordingly, included. This would indicate that the financial structure for such special hospital would embody a more refined and detailed analysis of the particular operating departments necessary to produce this specialized service. Correspondingly, the resulting types of income would differ from those of the general hospital.

To summarize, the fundamental difference rests in the professional care of patients and in this respect only, does the limitation manifest itself. The building with its usual facilities has the same problems of maintenance; the equipment, with some variation, presents a condition similar to that found in the general hospital.

With the establishment of the "financial structure" of your hospital, your next concern is the disposition of the factors that evidence your operations. From the accounting point of view, the factors affecting the superintendent and her office organization, are the following: (1) Purchases, (2) service rendered, (3) cash receipts, (4) cash disbursements. In order that these factors may be visualized fully and understood in their widest application, a general but practical outline is provided:

1. Purchases: Supply and Fixed Asset Requirements

A. For Acquisition
   1. Quotation request
   2. Purchase order
   3. Stock card
   4. Stores
   5. Bill
   6. Routine

For Use
   1. Requisition
   2. Summary of requisitions
   3. Stock cards
   4. Tabs—indicating reorders
   5 Definite rountine—weekly

B. Conditions of Purchase Agreements
   1. Contract basis—specified deliveries
   2. Ordinary purchase orders—day-to-day requirements

C. Kinds of Purchases
   1. Food provisions
   2. Medical and surgical supplies
   3. Housekeeping supplies
   4. Nurses' school supplies
   5. Building and equipment maintenance supplies

D. Equipment, Furniture and Fixtures
   1. Replacements of old equipment
   2. New equipment

2. Service Rendered:

A. Admitting Procedure
   1. Information card
   2. Social service
   3. Notification to—office
      —information
      —floor

B. Patients' Register

C. Medical Records

D. Census

E. Patients' Ledger Accounts—full pay
   —part pay
   —free

F. Charge Slips or Reports emanating from various Medical and Surgical Service Units and other Service Units

G. Delivery to Office Daily (morning and evening)

H. Rebates and Free admissions

I. Service Days—full-pay patients
   —part-pay patients
   —free patients

J. Balances of Patients' Accounts—patients in hospital
   —patients discharged

K. Collections on Patients' Accounts

L. Report—summarizing
   1. Service rendered
   2. Rebates and free work
   3. Service days
   4. Occupancy percentages
   5. Balances of patients' accounts.

3. Cash Receipts:

A. Operating Income

B. Miscellaneous—Nonoperating Income

C. Receipt
   1. Bound in book
   2. Duplicate—permanent record

D. Deposits
   1. Daily
   2. Duplicate deposit book
   3. Operating bank account
   4. Special bank account

E. Bank Books

4. Cash Disbursements:

A. Accounts Payable
   1. Fixed assets
   2. Supply requirements

B. Verification by Purchase Order
   —receiving slip
   —bill

C. Salaries and Wages—Verification by Employee Card
   —department head
   —payroll—by operating units

D. Petty Cash
   1. Telephone operator or information clerk
   2. Slips

E. Form of Checks

F. Bank Accounts—Operating Bank Account
   —Special Bank Accounts

The outline above includes considerable detail but we cannot forget that the superintendent's business office deals with the determination of such financial relations, their proper distribution and correct allocation; the more care shown in the disposition of the various items the better will be the results obtained. Unless this is observed, it is impossible to produce cost figures that will be any more than mere estimates, and consequently of little aid for executive purposes. To indicate to you the point of view of another, I quote from a paper by Alexander M. MacNicol, recently published in one of the other hospital magazines:

"Under many prevailing conditions, they (board of trustees) are balked, entirely from lack of sufficient correlated information, from applying to the hospital in which they are interested, methods successfully used in their own businesses. From their strong sense of accountability to the public for their stewardship, they resent their inability to publish a comprehensive report on the finances of their institutions. They know the value of a proper accounting system and welcome any influence that puts one to their use. They demand more enlightening statements of operation and finance from the accounting department. If it is not able to furnish the requested data, its reorganization along the lines of modern accounting procedure follows sooner or later. This accomplished, the members of the board begin to get statements that arouse their interest. They find that a modern hospital has many problems other than the professional care of the sick. For example, they may find that of their total expenditure, 40 per cent at the most is for professional care, while the remaining 60 per cent is absorbed: 10 per cent by administrative and corporate expenses, 27 per cent by dietary department, and 23 per cent by laundry, housekeeping, and general house and property.

"The fact that 60 per cent of the expenditures represent management, upkeep of property, and other costs necessarily incurred for purposes contributory to but not directly chargeable against the sole purpose of a hospital's existence, the care of the sick, proves to them that the administration of the hospital is largely a task for a business man."

This quotation shows quite unmistakably the need for an analysis such as has been presented—as a necessary preliminary step to the subject of the actual system of records—let alone the statements to be produced from such records for executive control.

In this connection, permit me again to quote from the same paper: "As to the mechanics of an accounting system for hospitals, it is quite important to remember that any system should have a twofold purpose: the safeguarding of funds and the production of information essential to proper management."

Information and data, therefore, essential to proper management must be produced. It must be such that with it the weaknesses of the administration office may be discovered, remedied, and later controlled. In order, however, to know what information to produce so that greater efficiency and better administration may result, an analysis, similar to the schedule suggested above, of these factors, is the next necessary step.

MAYOR AT CORNER STONE LAYING

Photo shows Mayor James J. Walker addressing the large crowd attending the laying of the corner stone for the new French Hospital located at 324 West 30th St., New York City.

Nutrition of Infants and Children

John B. Manning, M.D., Santa Barbara, Calif.[1]

WE, as children's physicians, frequently come in contact with mothers seeking advice for their child's nutrition. The picture of a well-meaning mother accompanied by a nurse and finally drawing up in the rear the subject under consideration, often reminds me of Brigg's cartoons, "When a Feller Needs a Friend." Armed with the group of figures on percentages, calories, roughage, and vitamines, we are informed that the child does not seem to gain satisfactorily.

Give Simple Directions

Now just why is it necessary to fill a mother's mind with such details? Often little is voluntarily given about the food itself, and sometimes the actual character and amounts of food have to be determined at considerable length and detail. Are we not, after all, simply feeding the child food, and is not the end result of our feeding, all of the things being equal, evidenced by the child's nutrition? We may maintain records of these facts in our office files, and then if the child under consideration does not gain in weight there is ample opportunity of studying the causes which may undermine its nutrition. These, by the way, are frequently quite remote from percentages, calories, roughage, calves' liver, etc. I have a notebook of Professor Heubner's lectures in Berlin, now made many years ago, who, so far as I am aware, first popularized what might be called the caloric method of feeding as it applied to infants and children. I have often seen parents, nurses, and occasionally doctors who have said that these amounts were not correct, since they did not correspond exactly to some particular table which they might be using. But what we all know, and I am sure Prof. Heubner himself knew, is that some children can take many more calories than others, and vice versa.

I once heard the late Dr. Emmet Holt say, all other things being equal, that the best index of an infant's condition was its gain and weight. Now, as to the use of roughage, this is not new. Many of us know a man who in selective cases has used it in the diet of his patients for thirty years, and I know of several others who have used it under the same conditions from eight to fifteen years. But why not discuss these matters in simple terms? And why is it necessary for a nurse or a doctor to fill up the mother's mind with such terminologies, when, after all, we are feeding simply food? The mother is a busy woman and, apart from other duties, with this individual child, is interested in its intellectual and moral development as well as its physical. "A little knowledge is a dangerous thing."

Weight-and-Height Tables

This brings me to another consideration in connection with the nutrition of the preschool child or the child of school age. Some years ago, as a director of the Society for the Prevention of Infant Mortality, with its headquarters in Baltimore, I was in close touch through directors' reports with problems affecting morbidity and mortality of infants, and, furthermore, these were the dawning days of concentration on the preschool child. Sitting in and listening, mostly, while on a child-welfare program in Europe early in our participation in the war with a group of men, many of whom later became identified with The American Child Health Association, which supplanted the Society for Prevention of Infant Mortality, I have often heard these men remark that just as soon as the war was over every effort would be made to concentrate in the future on the preschool child as had been done on the infant. One of this group is now a distinguished authority on these matters, and is a resident of California, Dr. Wm. Palmer Lucas. It is all familiar to you now how throughout the land this concentrated effort took place, and nutrition clinics, so called, and corrective work in this group for the first time received intensive consideration. As far back as the early nineties, Dr. Wm. Townsend Porter had in the St. Louis schools made a tabulated study of weight and age. This was long before he became professor of physiology at Harvard. Now, immediately numerous charts appeared, based on age, weight, and height. These were devised in foreign lands all the way from China, where V. B. Appleton made his study of "Growth of Chinese," to Russia. Prominent among these foreign studies were the articles of Carl Schitz' "Development of Children and Young People," in Christiana and Pirquet, in Austria, "a simple table for determining growth and nutrition in children," and numerous ones in this country based on other methods were devised. This table of Pirquet's you are all familiar with, particularly as a distinguished California pediatrician, Dr. Harold K. Faber, took issue with Pirquet over the famous so-called Mehm system which I watched with interest in Austria, Galicia, and parts of Poland. This concentrated effort on the preschool child and the child of school age certainly in our own country accomplished wonderful results. These charts, based on height to weight, too numerous to mention here, have been of great assistance in handling massed groups of children, in segregating the individual child. To anyone interested in this phase of the subject, I would like to recommend, as probably the most comprehensive series of abstracts ever published on this feature of children's work, the U. S. Department of Labor Children's Bureau Publications, No. 179, References on the Physical Growth and Development of the Normal Child. It contains some 350 pages of abstracts, close to 1,000, in all languages. I have followed this movement with much interest from the beginning, since the day I was approached to consider directing one of the original Child's Health Demonstrations of the Commonwealth Fund. It is about these charts as they relate to the individually segregated child that I wish to express my opinion for what it is worth.

May I be permitted to quote at this stage from the splendid little book of Dr. Charles Anderson Aldridge, published by the Macmillan Company, which expresses many of these ideas far better than I have done. For example, in the foreword, by Dr. Clifford C. Grulee, M.D., "The very arousal of this intense interest in motherhood has brought with it too great an eagerness to obtain the impossible—perfection—and too great a desire to have the child conform physically to standards rather than to judge each as an individual." This is the conclusion that all those who deal with problems of this kind soon will arrive at, if they have not already.

The Baldwin Chart

Dr. George Still, of the great Ormond Street Hospital, London, used to tell us as students that a child had hereditary potentialities of tooth development, facies, stature, and the like. It follows, then, that a child of small parents is small, and a child of large parents is large, all other things being equal, except, for example, in the case where the child may take the stature of its grandfather or grandmother or aunts or uncles. In other words, the factor of heredity must be considered, and so far as I am aware, there is but one such chart that takes

[1]Read before the Staff of the St. Francis Hospital, Santa Barbara, April 12, 1928.

this factor into consideration, it is the Baldwin or modified Baldwin chart and extensively used in relatively few places. It can be purchased from the board of education of the public schools in Philadelphia. It groups the children into three separate groups, the tall, average, and large child, with 10 per cent under weight and 15 per cent overweight in each of the three groups. Dr. Heubner, before his death, and Dr. Still were close friends; although each preeminent in his own land, were too busy to see much of each other. They have handed down to us these two great clinical contributions, which are fundamental.

Hereditary Characteristics

The latter I am constantly impressed with has not received the recognition in general throughout this country which it warrants. It has, therefore, been my custom with the individually selected child to pay relatively little attention to its height to weight, but particular attention to its nutrition as indicated by the turgor of the skin, the feel of the subcutaneous tissue, and the weight curve from time to time supplemented by the hereditary history of stature. When I was in the academic department at college they used to say that the hardest race to run was the quarter mile, yet in my days, these boys were always over height for weight and hard as nails. A child may be over height for weight and in perfect nutrition, of the wiry type with the father or mother who has the same wiry type of stature, and is in splendid health. The only way, if it were possible, quickly to put weight on to such an active wiry child with good turgor and haemoglobin in order to make it conform to an established height-to-weight scale, would be to put the child to bed, which would be as unnatural as putting a normal adult to bed. Through various agencies it has become a common occurrence now and then for a mother to have a height-to-weight chart in her own home; not realizing the element that heredity may play in the condition of her child's stature, and consulting charts that are meant for group examinations from authoritative sources, she becomes perplexed and often worried that her child does not correspond with these tables, and in a state of anxiety consults someone, often someone who places the same interpretation on the child's condition. It would naturally follow, therefore, that in dealing with the individual child a more careful study of the physical characteristics of the parents as to their growth and stature, and a more careful examination of the child's nutrition irrespective of height to weight, would appear a more logical procedure.

Homes for Undernourished Children

This brings me to another consideration concerning children's nutrition. There has grown up over the entire country the establishment of what are familiar to you as a group of institutions, sometimes called convalescent homes, preventoriums, or homes for undernourished nontubercular children. There is, I believe, a distinct difference between a convalescent home and the latter organization. As far back as my association with children goes, a convalescent home, for example, has been maintained by the Boston Children's Hospital, where infants and children convalescing from acute and chronic conditions in the large metropolitan hospitals are housed until their condition warrants their being removed to their homes. Many similar institutions, as the Burke Foundation at White Plains, New York, and numerous others have been developed for the care of this type of child. Those interested in this subject may be referred to the thesis of Hortense Kahn of Johns Hopkins University, on The Standards of Care for Convalescent Children, issued by the Sturgis Research Fund of the Burke Foundation, White Plains, New York.

However, this is not the type of thing I wish to discuss with you. There have been for many years homes of the type with which Dr. Alfred Hess, of New York, was some years ago associated, called at the time by many, a preventorium. Some of these institutions were called homes for pretubercular children, a term which never met with much favor and has rightly been discarded. Of more recent years, and more particularly at the present time, every community of any size is putting in a home for undernourished children. There is a demand in a large metropolitan community for a fairly large organization of this character, and, to a limited extent, in smaller communities, like Santa Barbara. Some of these are publicly financed through various agencies, community chests, where they exist, and private subscriptions. Much consideration, it would appear to me, is necessary in handling problems of this character, first involving a thorough study and observation of the individual child to be admitted, and second, how large are these institutions to be developed? Regarding the first of these matters, as pediatrician to the outpatient department of the Cottage Hospital and director and pediatrician to the St. Francis Hospital outpatient department, both of Santa Barbara, I see all the children going to the local institution for children of this type in Santa Barbara. The institution is full. Now we have natural climatic conditions in southern California distinctly favorable for sun therapy. Are we simply taking the easiest course and sending, as a result, a lot of children who, if carefully followed with intelligent direction by the parents, Visiting Nurse's Association, and physician, and at the same time stimulating an interest of the parent in each child's condition, and what is of more importance, of stimulating the child's interest in its own condition in its treatment in the home, are we not, I say, taking the easiest course in quickly sending such children to institutions of this kind?

Home Treatment for Undernourished

In one of the large institutions for undernourished children on the Pacific Coast, now under operation several years, I know of the disappointment encountered in following up this type of child after it has been discharged. The medical doctor told me that 50 per cent of all discharged children were found again in the dispensaries at the end of six months in approximately the same condition as at the time they were first hospitalized, therefore hospitalization of this type of child is but half of the problem, and it is not a matter of four months or several months, but a matter of two or three years with cooperation of the best possible home conditions which in many instances lies behind the whole problem. It is interesting to know that institutions of this type with the problems they present are to be discussed thoroughly before the National Tuberculosis Association meeting in June in Portland, Oregon, where there will be at least two papers dealing with it. From my personal observation, I believe in many instances a child may put on weight more quickly under the régime of such an organization, since children do things largely by competition and imitation; nevertheless, there are children sent to the outpatient department of these hospitals to be admitted to the homes for undernourished children whose interest in their condition, and whose parent's interest in their condition under supervision has been aroused to such an extent that the factors contributory to undernutrition have been eliminated in the home, and, as a result, we have children now gaining two and a half pounds a month still under observation. This necessitates removing the child from school, and this is the only objection with this certain selective group. The director for a large metropolitan home for undernourished children only recently told me that everything was secondary to the sun therapy, and at whatever hour of the day the sun's rays reached the desired temperature, whether it were school hour or not, the child's physical

condition received first consideration and the school was temporarily disbanded. So it would appear that in southern California, dealing with children who live under naturally favorable climatic conditions, that many of these problems can be worked out at home, and we must go very slowly in building up institutions of this character.

There is one other point in this connection to which the author has given months of thought. It would naturally follow that as is customary in metropolitan communities where the children are discharged to the health center from which they came, that in smaller communities like Santa Barbara, instead of discharging them for follow-up to a separate health group, that they be discharged to the dispensary from which they came. This dispensary could act both as a health center and a dispensary, and since complete history, physical examination, and laboratory work had been done on the child and is on record, the dispensary would be the natural place to send the child when it leaves an institution for the undernourished in a small community like Santa Barbara.

Our plan in Santa Barbara, suggested by Miss Florence Johnston, of the Visiting Nurse's Association, is as follows: When the child is discharged from Sunshine Cottage by Miss Follett, the nursing director, the social worker from each of the two dispensaries in Santa Barbara, Miss Johnston of the Visiting Nurse's Association, the mother of the child, Dr. Allan Williams (who looks after the children while in the Sunshine Cottage), and myself (who does the admitting), sit in together once each month and discuss the follow-up progress. It has been further suggested by Miss Follett that the mother spend a day or two at the institution before the child is discharged to learn the routine. Our plan is to hospitalize but a few and see if it is not possible to obtain 100 per cent results in the follow-up rather than 50 per cent, as seems to be the case now, and thereby avoid hospitalizing half as many children and spending an equal amount of time on intensive observation of the child after it is discharged.

Teaching Nutrition to Mothers

In conclusion, in dealing with methods of presenting facts to mothers relative to nutrition, how is it best done? It seems to me that if a group talk is given, it is of value only when it is supplemented by individual discussion which takes up the problem as it relates to the particular child. For example, in the case of, let us say, the well-baby clinic of the Visiting Nurses's Association of Santa Barbara, which may serve as an example. Miss Florence Johnson is the superintendent and has under her a splendid group of nurses. Here each week, on Thursday, Dr. E. J. Lamb and myself see on an average of from 40 to 55 well babies. Advice is given which applies to the individual baby, relative to feeding only, and the sick baby is sent to the family physician. These mothers, I am sure, go away with more practical and definite ideas than if these matters were discussed in a group. They have their babies with them and every question is an intelligent, constructive effort to solve the particular problem confronting them. I have tried both methods, of talks in groups and individually, over a period of twelve years, and am convinced the latter procedure makes for better results.

Only a few weeks ago I was approached by the superintendent of one of our local hospitals to give a series of talks to mothers on these subjects, and declined for the reason stated above. Having assisted in the establishment of several hundred well-baby conferences of various child-health programs, I would like to pay particular tribute to the socially trained public health nurse. In the case of a well-conducted well-baby conference under a public-health group, where the nurse is present with the physician and the mother, she is in a unique position to radiate into the homes and in a kindly, efficient manner assist the mother in solving her problems.

This has long been the recognized procedure, giving the most satisfactory results to individuals directing child-welfare effort, particularly as it relates to the feeding and is far more effective than group talks in private practice or public-health work, unless supplemented by the follow-up, individual, detailed instruction, relating to the particular problem that each case presents.

CLASS OF 1928, SANTA ROSA INFIRMARY, SAN ANTONIO, TEXAS

Problems of the Outpatient Department

Some Reminiscences, Observations, and Suggestions

E. P. Neary, M.D., Staff of St. Vincent's Charity Hospital, Cleveland, Ohio

To those who have been brought up and reared in the atmosphere of the modern hospital, with its elaborate social-service system, and its clear-cut departmental sections, there is nothing strange or wonderful in the existing order of things. Nor could there be anything strange about it to those who have never known any other system. But to those of us who have served under the old régime, the changes seem so far-flung and so rapid, as often to leave us more or less nonplused. From the most insignificant of beginnings, what proportions have been assumed in a few short years! And what a panorama of varied activities unfolds before our eyes as we gaze upon the modern prodigy of service. I often wonder myself if the parents of this healthy youngster do not themselves often contemplate it with wonder and amazement, admitting, if the truth were told, that it has surpassed their fondest and wildest hopes.

The Older System

It is not so long since as time goes, nor is it a difficult matter for me to recall to mind that old outpatient department of ours, ere it had donned the newer and more modern garb it now displays, so that it, too, would be progressing and growing as modern institutions must do. I can see a line of patients, many in number even as today, waiting their turn to be directed to the proper department. Bending over the desk was one lone doctor getting order out of chaos, quietly, quickly, and efficiently, guiding with a keen eye and a few short questions, the medical case to the medical, the eye case to the eye, and the surgical case to the surgical departments, with an accuracy that seldom forced him to bear up under the irony which fell to his lot when he slipped. And on his part never asking them if they were millionaire or pauper, knowing well that truth must prevail somewhere along the line. And were it not to so prevail, knowing well also where to fix the responsibility, and where to vent his sarcasm in turn, even as had been done unto him. There was a spirit of watchfulness there, that made for an efficiency out of proportion to its simplicity.

And so, as we of the older order of things reminisce, there needs must cross our faces a smile, as incident after incident unfolds before our memory. How adept the man in the department became in sizing up a patient. What means there were at his disposal in those days to determine his financial status, present or absent. How many of them were subjected to an examination that made them fear to try to impose, and how the news would spread. Still, how the needy regarded them as their friends. How often have I seen the doctor dress a patient with a care and consideration and kindness far removed from any gesture that would appear mechanical, and then dig down in his pocket for enough money to pay his carfare home, or get him a warm bite to eat. Truly, there was something in the older days that modern efficiency has removed, and the thrill of which the modernist will never experience. There are some things we cannot commercialize, and if we attempt to do so, we change them entirely or destroy them utterly.

With the mood still upon us we cannot but hark back to the old accident room of a busy Saturday night, before alcohol was legislated more or less completely from our midst. And it is but natural to think of it as it is so closely connected with the dispensary, so many of the cases eventually passing through its various departments. How fortunate we were when the well-shaken pants of the patient who had imbibed too freely revealed sufficient money left from his orgy to pay for his dressings. And how we came to regard it as a routine procedure, more or less natural even for such a lesion as a lacerated scalp. And this invariably in every case to the utmost satisfaction of the patient when he was able to cerebrate. Those were the days before the various "funds" came into existence. The accident room was expected to pay its own way as far as possible. And I can recall one good old Sister with an eye so keen, and an agility so quick for one of her years, that it was difficult indeed for any of us to fool her to any extent.

Before admissions were such businesslike routines, I can look back to an incident, if I may wander still further for a moment, that is descriptive of many of its kind, and difficult to realize as possible in these modern days of efficiency. I recall in particular one good old saintly Sister in charge of the male ward at night. My early introduction to her was impressive. I made rounds one evening with the ward in question more or less empty, but I was called to the accident room late that same night. Having taken care of the case, I thought I would look in at a man who was doing poorly earlier in the evening. What was my surprise to see every bed filled and the good old Sister herself going around by the light of a candle and administering to the wants of as fine an assortment of unfortunates as one could look at. "Sure they have no place to sleep and are hungry. I will get them out in the morning before anyone is up and no one will be the wiser," she said. And no more so were they. There was the spirit of service and charity without any frills. This saintly old Sister was known and worshipped for her humble spirit of service by the highest and the humblest; known, I have been told, far beyond the confines of the community which her hospital served.

Little does the modern hospital worker know what these older ones have gone through. The modern appliances and conveniences that make for their comfort, make it impossible also for them to realize or appreciate the vast amount of work turned out efficiently and well under difficulties that would now seem well-nigh insurmountable. And yet how wonderfully they have arisen and kept pace with the modern order of things, and how pathetic it is at times as we watch them adjust themselves, with the memory of the past that meant so much to them ever in their minds. Incidents like this necessarily give us pause and make us wonder at times if we are not needlessly losing a little of the human touch in the hurry of modern progress.

The Hospital is for the Patient

It is essential that we always keep in mind that the hospital and its various departments are created primarily for the treatment of disease. The consideration and care of the patient's pathology is the prime factor that warrants its existence. Every other consideration, department, or activity is secondary and has come into existence as an added or side issue to this main thought. Oliver Wendell Holmes once remarked that the constitution was made by and for men, not men for the constitution. There was a

time when this would seem self-evident. Still as we gaze around us today a little doubt assails us here and there. Would we not be better perhaps and serve more efficiently if we were to apply his idea to ourselves, and realize and keep in mind that the clinic was made primarily for the patient and not the patient for any particular service or department?

Charity is a virtue that has ever been especially venerated. We are told that there are three virtues: faith, hope, and charity, but that the greatest of the three is charity. Maybe the time will also come when we will realize that charity cannot be entirely commercialized. That when it does, it ceases to be charity, and that the one who makes a business of being his brother's keeper must be satisfied with a mercenary reward also. The modern trend seems to be to legislate a man into the Kingdom of Heaven whether he wants to go there or not. Let us not introduce such tactics into our work which has always been a noble one. Let us not legislate, force, or compel a routine that will redound to our credit at the discomfort or sacrifice of the patient. Let us feel that he must not be made to work for any particular service or department, but rather the service or department for him. Self-evident as this is, I wonder if occasionally we are not apt to lose sight of it.

The spirit of service to the patient must work smoothly between the various departments, if the maximum efficiency is to result. Perhaps when each realizes and recognizes its proper sphere, needs, and limitations, a newer era of service will result. We owe a great deal to, and have the greatest appreciation of, the many services that social-service workers render. Their service, as they go on in their work, resolves itself not into one of a pecuniary nature alone, but the spirit of service imbues them so thoroughly that they realize there is something in their work other than is in the humdrum existence of a mere business life.

Once the social status of the patient has been determined, it would appear that his cure or attempted cure is the main consideration. He must be satisfied as a rule as much as the most exacting patient in private practice. This was even more so in the old days, before the intricacies of clearing houses, etc., kept a patient more or less in one place until he was released. In those times, if he did not get the attention he felt entitled to with us, he went elsewhere. We did not like to see this, naturally. Competition was keen among the clinics, but the proper kind of competition and results were, to say the least, beneficial.

What is Success?

It follows naturally also that, if the relief of the patient is the prime consideration, the efficiency of the medical men in attendance is what will ultimately determine the success or failure of a department and not the efficiency of any agency outside of this. A successful clinic is built in this way and in this way only. A healthy rivalry and spirit of competition is not only to be desired but also to be highly praised. Still I often wonder, when I hear clinics discussed, whether numbers is a true index of their success or failure. If the surgical department of Hospital A, let us say, has been running ahead of the same department in Hospital X, and suddenly, according to published statistics, falls behind, should it be regarded as failing? Is Hospital A slipping? What is wrong? Perhaps it may be possible to read the true facts between the lines. I would not like to feel that the social service of any hospital believes that it owes its existence to and derives its credit purely from the number of people it serves. Why should quantity rather than quality be the index of success or efficiency here less so than anywhere else? Surely it is not so in the various departments. The doctor realizes and has always felt that it is not numbers but efficiency that determines the true success of his work. A judicious combination is what must be sought. In the crowded clinics of today we must turn out many. The aim must be, as many as possible properly taken care of, rather than all we can get just seen. So it is possible that, if the visits in Hospital A sometimes fall off, it may be that they are curing some of their patients, getting rid of them, rather than having them drag on day after day, swelling numbers to be sure, but giving no index at all of that primary consideration, the welfare of the patient. As in every new movement, the pendulum of enthusiasm is apt to swing from one extreme to another, there always comes a time when it comes to rest, and in a position it was primarily intended to maintain, and where it functions most efficiently.

The Physician's Interest

It is an unfortunate thing that the outside medical man feels that the modern outpatient department is cutting into his practice, and so into the revenue which is justly his. How often do we hear complaints as to his patients having work done free. And this in spite of the elaborate defense that has been built up to protect him. Still, this evil does exist. There is absolutely no question but that a great amount of gratis work is done where there exists not the slightest occasion for charity. There is a vast amount of room for improvement in this regard, not in any particular community, but wherever the dispensary exists. Much has been done to eradicate this evil. Much more remains to be accomplished. May it not be that the physician's aid will have to be elicited before we reach the final solution? The ideal disposition of the matter may rest in a closer cooperation between himself and the clinic serving his community. I like to feel that he would be willing to give some of his time to accomplish this end. That he has not been asked, and in a great many instances, not even considered as a part of this intricate system, is only too true.

Those of us who come into daily contact with these problems realize that undeserved charity is never given deliberately. Instances arise that are hard to explain, but we would like to have the physician feel that an abuse of this nature has no place in the clinics of the better hospitals. Whether an individual in good financial standing should receive free care merely because of social standing, his peculiar occupation, or relationship, is without the scope of this paper. The latter question does not affect the practitioner to the same extent as the other and graver problem. This type of charity case, feeling so inclined, would expect free care from him as well as from the institution.

If the physician will but look at another side of the question he may get a viewpoint that possibly has heretofore escaped his attention. Is the outpatient department taking a burden off his shoulders, that he would otherwise have to carry? In the old days, every practitioner had a list of patients whom he knew were a total loss financially. Still, he had to do his share. When they needed attention they took up a considerable part of his time. If we can do this work for him, give him more time for recreation, leisure, or study, may not the balance swing slightly toward our side, even if occasional abuses do creep in? May it not tend in a way to even up matters a little, and to temper the criticism that he feels is due us? This thought is given with the idea of reaching a more mutual understanding, and with the hope that it will tend toward a policy of tolerance until a more efficient procedure can be reached, or worked out. That this is the endeavor and

the aim to which we are eventually struggling, we would like to have him believe. That we who are so engaged, have no connection with or consideration for the paid clinic that underbids him, or the one that does wholesale work at a fee that eliminates him as an individual, we would also have him believe. Such is not and never has been the intention of the outpatient department. Anything of the kind that has arisen is secondary to and without the pale of the original idea that brought these much-needed departments into existence. They cannot by the farthest stretch of imagination claim any kinship to the true dispensary. I like to feel that when a better understanding is reached he will send us of his own accord those of his practice that he deems worthy, visit us as we care for them, follow them along clinically there or in the hospital, and realize what a service they receive that could otherwise not be theirs. It has been said, and with perhaps a little truth, that the rich and the very poor are the fortunate classes of patients. The one can afford the best, the other receives it gratuitously. The burden of economy often rests hardest on the middle class who must work out their own salvation.

The Outpatient Physician

The physician working in the outpatient department deserves a little of our consideration also. Giving freely of his time and talents, more valuable to the clinic as his period of service lengthens, only too often does he go on serving without any recognition whatsoever. It is only too true that in a great many institutions a gap exists between the outpatient and regular departments of the hospital, abysmal in character so far as he is concerned. Much could be said or written on this subject alone. Suffice it to state that an earnest effort is being made to bridge this gap. The benefits that must necessarily accrue when a proper understanding is reached, and the outpatient physician gets the recognition that is only his due, will be many and will be mutually satisfactory. I do not think it extreme to say that many a staff man in a hospital could not even point out the various departments in his outpatient clinic, much less give a fairly accurate account of their activities. Very seldom, if ever, does he visit them even for a moment, nor does he make an effort to become acquainted with the men who are responsible for feeding a great deal of clinical material to his wards. Theirs has been and is truly an unselfish service, out of all proportion to the benefits they have received. I should like to feel that they, too, some day will have their place in this great adjustment, and will come into what is justly theirs. With such a goal to work for, we cannot but have efficient men, doing efficient work for thoroughly satisfied patients. We must give them something to work for, a suitable reward if they merit it. Such a course must inevitably come and cannot but be productive of the greatest good.

Patients Must be Cared For

Another problem that is often one of anxiety to the outpatient worker, is the apparent disproportion between their growth and the facilities of the institution to hospitalize their cases. As the dispensary grows the percentage of cases requiring institution care increases, and the number of ward beds must be so adjusted as to meet the demand. We must either stand still or progress. The importance of this point cannot be overestimated. It is obviously unsatisfactory to have a department work up a case only to find it necessary to send it elsewhere due to a lack of bed facilities. In permitting its outpatient department to increase, the hospital assumes an unshirkable obligation to do its share, and to assume an equal responsibility in the proper care of the individual it accepts for treatment. There is something wrong in a clinic that doubles the number of patients in its various departments with hospitalization facilities no greater than existed when it was half the size. Some solution will eventually have to be reached that will strike a proper balance.

In our hospital, as must be the case in other institutions, we have another problem that is very difficult of solution. I refer to the number of colored people that visit the various departments in ever-increasing numbers. Segregation in the ward, of course, must be the rule. It sometimes seems to me that maybe we do not give this class of people the consideration due them as patients. And yet, on second thought, it would be obviously impossible to attempt to hospitalize them all. Still, if the outpatient department accepts them it must make provision for their care. While there is always an attempt at a fair distribution, this is a problem that will require considerable solving in the near future. The burden of their care must be prorated and the community in which they live and work must eventually realize that theirs, too, is a responsibility that cannot indefinitely be put upon the shoulders of others.

These are some of the reminiscences and observations that have come to me as I have viewed these problems. Certainly they do not begin to cover the entire field, nor were they intended to do so. But as we thread the modern maze of things it is diverting and mayhap instructive to pause and retrospect and observe a little. Such has been our intention. What may appear critical is given with the idea of being constructive rather than destructive. What suggestions we may have to offer are given in the same spirit. Nor need we detail them as they necessarily follow what we have observed.

Briefly, there must be a spirit of cooperation wherever it is possible; a proper understanding of our relation to the patient and what is in our power to accomplish; consideration for those who serve; the proper relation between hospital and dispensary, and cooperation between the departments. There must be a competition active and along the right lines; a better and closer union between the hospital and dispensary staffs; a better understanding and a more friendly relation with the outside man; some consideration for him who serves without remuneration or reward; and lastly, and above all, the patient: primarily and always his welfare; the treatment of his pathology in the first place; and then the care of whatever other problems may arise.

Surely such a policy cannot but tend in its way toward the production of better service. And surely the individual or department that helps the institution to serve better and better, whether they realize it or not, are helping their hospital to progress.

CLASS OF 1928, MERCY HOSPITAL, DEVILS LAKE, N. DAK.

Some Valuable Hospital Statistics

By the Editor

THE issue of the Journal of the American Medical Association for Saturday, March 24, of this year, prints some very valuable and interesting statistics concerning hospital service in the United States. Since 1906, when the first edition of the American Medical Directory was issued, a continuous effort has been made by the headquarters of the Association to gather information about hospitals, so that the Association files now offer "a history of each hospital and a perpetual inventory of hospital service."

One of the outstanding lessons of the data furnished by 5,100 hospitals concerning their staff lists, is the immense importance of hospitals to the physician. On these staff lists, 107,734 names appeared, despite the fact that 1,707 other hospitals failed to send in staff lists and that some hospitals have no staff. "Making allowance for errors," the editorial concludes, "more than 85,000 physicians are actually practicing in hospitals."

The Physician and the Hospital

The hospitals also report a total of 514 resident physicians, 4,443 interns, and 2,461 physicians who act as superintendents. The editorial goes on to note that "hospitals are both the training ground and the workshop of physicians. . . . A considerable portion of his third and fourth years is spent (by the medical student) in the hospital. The figures indicate also that at least 90 per cent of all medical graduates spend one or more years in hospitals as interns. Not only is the approach to medicine through the hospital, but this is also the accepted mode of procedure into specialists. The obvious conclusion from these facts is that every physician who is ambitious and interested in his profession ought to take a vital, personal interest in hospitals, their management, and their welfare. Even a skillful artisan, who is interested in his work, first seeks a well-equipped workshop and is interested in improving it in every way he can, so as to do his work better. Surely, therefore, the ambitious physician will wish to know as much as he can about hospitals and do as much as he can to promote their welfare."

In this connection it will be interesting to reprint remarks about physicians connected with hospitals given in the Journal of the American Medical Association for March 24.

"Exactly 5,100 hospitals have sent in the names of the physicians that attend patients in those hospitals, including, also, interns and resident physicians, as well as physicians serving as superintendents or administrative heads. These 5,100 hospitals report a grand total of 107,734 names of physicians connected with them. Staff members reported, exclusive of the house staff, number 95,716. The resident physicians named number 5,114; interns, 4,443, and physicians acting as superintendents or administrative heads, 2,461.

Ownership of Hospitals

Another interesting table gives the summary of hospital data. Thus, the Federal hospitals number 301, with 60,444 beds, and an average of 42,137 patients. The state-owned hospitals number 592, with 354,786 beds, and an average of 328,737 patients. The number of county hospitals is 480, with 58,907 beds, and an average of 47,704 patients. The city hospitals number 366, with 63,327 beds, and an average of 46,389 patients. The city-county hospitals number 70, with 7,705 beds, and an average of 5,190 patients. The total number of government-owned hospitals is 1,809, with 545,169 beds, and an average of 470,157 patients.

Next in number come the church hospitals, which number 1,030, with 108,582 beds, and an average of 72,813 patients. Needless to say that by far the greater number among these are the hospitals in control of Sisters. The fraternal hospitals number only 85, with 4,935 beds, and an average of 3,193 patients. The industrial hospitals number 161, with 7,032 beds, and an average of 3,694 patients. The individual or partnership hospitals number 1,682, with 39,118 beds, and an average of 21,779 patients. The independent hospitals number 2,010, with 148,482 beds, and an average of 100,196 patients. The total of nongovernment hospitals, therefore, is 4,998, with 308,149 beds, and an average of 201,675 patients.

This report confirms the well-known impression that the government hospitals are in general less in number proportionately, but with much larger bed capacity. The church hospitals come next in average bed capacity and the other classifications are usually much smaller than these other two groups of organizations. It is noteworthy also that while the government-owned hospitals are occupied 86 per cent of their bed capacity, the church owned only average 67 per cent occupation in their beds.

Relative statistics of five years ago and today show that while five years ago there were 893 church-owned hospitals, there now are 1,060, and the capacity of these has increased from 77,941 to 108,582, and while the average number of patients has increased from 49,046 to 72,813. It is noted also that these church hospitals take care for the most part of acutely sick and injured patients, while a good many chronic patients and especially dependent go to the government-owned hospitals.

Types of Service

The totals of the hospitals in the United States for the year 1927, grouped according to their types of service, are very interesting. The figures are of 1927 and show that, among the 6,807 approved hospitals in the United States there are 4,322 general hospitals with 345,364 beds and an average of 228,084 patients. The nervous and mental hospitals number 563, with 373,364 beds, and an average of 349,667 patients. Tuberculosis hospitals number 508, with 63,170 beds, and an average of 50,784 patients. Maternity hospitals number 178, with 5,747 beds, and an average of 3,695 patients. Industrial hospitals are only a little less numerous, with 168 hospitals and 7,039 beds, and an average of 3,712 patients. There are 159 convalescent and rest hospitals, with 8,143 beds, and an average of 5,589 patients. The isolation hospitals are 98, with 8,895 beds, and an average of 3,264 patients. Children's hospitals number 58, with 5,050 beds, and an average of 3,487 patients. Eye, ear, nose, and throat hospitals number 77, with 2,832 beds, and an average of 1,502 patients. Orthopedic hospitals are 62, with 5,595 beds, and an average of 4,456 patients. The skin and cancer hospitals number 16, with 919 beds, and an average of 611 patients. Hospital departments contained in other institutions number 530, with 21,930 beds, and an average of 12,453 patients. All other hospitals which are not classified in the former divisions are 68, with 5,240 beds, and an average of 4,528 patients.

Thus, we find that in the sum total of 6,807 hospitals there are 853,318 beds, with an average of 671,832 patients. This number of beds does not include the bassinets for babies, which number 41,961, so that the grand total of capacity in our approved hospitals is 895,279 beds and bassinets. While we see that in the report for 1923 there were 6,830 hospitals which, all told, contained only 755,722 beds and 34,511 bassinets, a total of 790,233 (the number of bassinets is given as of the year 1925), we can realize that while the number of hospitals has decreased by 23, the number of beds has increased by 97,596, and

a grand total by 105,046. This shows the tendency is toward larger and fewer hospitals. These same figures may be found in the report analyzed by states.

Schools of Nursing

Since the question of nursing education is at present so acute and interesting, it will be worth while for the benefit of our readers to republish the summary of statistics about schools of nursing which appear in the Journal of the American Medical Journal for March 24, 1928. The statistics are as follows:

"Last year, for the first time, were presented complete data in regard to nursing schools and it is noted that in the past year the total number of schools in the United States has increased from 2,155 to 2,286, while the total number of hospitals, without schools of nursing, decreased from 5,261 in 1926 to 4,521 in 1927. New York shows the greatest increase in the number of training schools, and seven states show no increase. Nevada remains the only state which does not report any training schools, and New Mexico still has the smallest number of schools, three, a gain of one school over the preceding year. Pennsylvania continues to rank first in number of training schools, reporting a total of 194 schools. New York again holds second place with 179 schools, a gain of 18 over last year; Illinois reports five new schools, making a total of 152, and Massachusetts reports a total of 125 schools, a gain of 13 over last year. Other states report increases from one to 12 schools during the past year. Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, and Texas report decreases in the number of training schools.

"The number of training schools in hospitals which, for various reasons, are considered unethical and as unsafe places for the care of the sick and injured people, has increased from 38 in 1926 to 48 in 1927. However, there is a gratifying decrease in the number of such training schools approved by the state boards of nursing examiners. In 1926, Pennsylvania reported but one training school in an unethical hospital; in 1927, the number had suddenly increased to six, the largest number in any state except Illinois, which has 11. The Pennsylvania schools, however, are not state accredited. The number of states (21) harboring such schools remains the same as in 1926, but Oregon and Washington, which last year had one unethical school each, now have a clean slate, while Michigan and West Virginia each have gained one such school the last year."

From the Editor's Pictorial Notebook

ST. VINCENT'S HOSPITAL, TOLEDO, OHIO

Student Nurses.
Library, Nurses' Home.
Vestibule, Nurses' Home.
Meeting of the I. C. G. N.
Members of Toledo Chapter of I. C. G. N.
Student Nurses.

—Photos by Father Garesché.

Circumstances that Influence the Obtaining of Necropsies[1]

E. T. Bell, M. D., Professor of Pathology, University of Minnesota Medical School, Minneapolis

THE statements made in this paper are based on personal experience at the University of Minnesota. During the year 1927, the staff of the department of pathology performed 1,353 postmortems. Of these, 1,023 were done in Minneapolis and nearly all of the remainder in St. Paul. The department of pathology offers a free postmortem service to all hospitals and physicians in Minneapolis, but serves only the Ancker, St. Luke's and Miller hospitals in St. Paul. There were 4,729 deaths in Minneapolis in 1927 (not including stillbirths). When the stillbirths are deducted from the total Minneapolis necropsies, one finds that 900 of the 4,729 dead (approximately 19 per cent) were examined post mortem.

This figure includes 200 cases from the coroner's service, leaving 700 (15.4 per cent) in which the permission of relatives was secured. Aside from the coroner's cases, the great majority of deaths occurred in hospitals but there were a large number of cases from private homes. Apparently there is a much larger percentage of necropsies on patients who die in hospitals.

Factors Affecting Postmortem Examinations

The several factors concerned in the postmortem are: (1) the physician; (2) the hospital; (3) the pathologist; (4) the relatives of the deceased; (5) the undertaker, and (6) the age and sex of the deceased.

1. The Physician

The most important factor in securing a postmortem is the attitude of the attending physician. Outside of the large hospitals where the influence of the institution is felt, the necropsies come from a progressive but relatively small percentage of physicians who are interested in correcting their own errors of diagnosis and therapy, as well as in the advance of medical science. As consent can occasionally be obtained for a postmortem merely for the asking, the physician who does not secure any at all is obviously at fault. The influence of a single physician in a hospital often doubles or triples its percentage of postmortems. Some individual physicians and some clinics secure as high as 80 or 90 per cent of postmortems. These instances are so impressive that one can hardly escape the conclusion that the first step in establishing a postmortem service in a community is to get the physicians in such a frame of mind that they will want to see postmortems.

Such success as we have had in Minneapolis is largely due to cooperation with physicians. The pathologist arranges the time to suit the convenience of the physician, so that he will lose as little time as possible from his practice. The lesions are demonstrated and an effort is made to correlate the clinical symptoms and physical manifestations with the postmortem changes. A full typewritten report is mailed the physician a few days after the necropsy is completed. The observations of junior assistants are checked by one of the senior members of the staff before the report is sent out. No charge is made either to the physician or to the relatives.

A free service is very important. In cities in which medical schools are situated, it is often possible to establish a free service through the department of pathology, since necropsies are an important part of medical teaching. In cities in which there is no medical school, the problem is more difficult but by no means insurmountable. The larger hospitals should have a competent full-time pathologist. Smaller hospitals and groups of physicians might combine to pay the salary of a pathologist.

2. The Influence of the Hospital

The action of the Council on Medical Education and Hospitals in requiring at least 10 per cent of necropsies in approved hospitals is to be highly commended and is already showing good results. The usual cause of the prevailing low percentage is indifference on the part of the staff or the superintendent. The staff, as well as the superintendent, wants to keep the hospital on the approved list and consequently will make some effort to comply with the regulations. When the postmortems are properly performed, the interest aroused in the staff may make further compulsion unnecessary. The superintendent who wishes to suppress unnecessary and misdirected surgical operations soon learns the helpful influences of the postmortem table. It appears that the best way to proceed to increase the number of postmortem examinations is through the administrative agencies of the hospitals.

3. The Pathologist

The chief responsibility for the success or failure of a postmortem service rests with the pathologist. If he knows his subject thoroughly and has an agreeable personality, he can easily make physicians want to see postmortems. He should be trained in the diagnostic side of clinical medicine, so that he can interpret symptoms and physical signs in the light of the lesions disclosed at necropsy. An untrained pathologist soon kills all interest among the physicians, since no one has confidence in his diagnosis. The practice of having the postmortems performed by a member of the clinical staff is a poor makeshift. It requires as much time to train a pathologist as any other medical specialist. There are very few young physicians at the present time specializing in pathology, largely because the financial rewards are less than in other lines of medical practice. There will be a scarcity of first-class men until this condition is improved.

4. The Relatives of the Deceased

The attitude of the relatives reflects the local public attitude. Public sentiment can be built up slowly when all the best physicians cooperate in asking for necropsies and educating the public as to their value. There are no set formulas for securing permission. The physician who has the confidence of the family is the one most likely to secure consent. Many persons give permission as a favor to the physician whom they trust. The educated are often influenced by a desire for an exact diagnosis or a wish to advance medical knowledge. We rarely secure consent for a necropsy on a Jew. The objections of Jewish people seem to be sentimental rather than religious. Jewish physicians should do all in their power to counteract this sentiment, since a relatively large proportion of young Jews enter the medical profession and depend on necropsies for a part of their education. An appeal to the educated Jewish public to contribute their share toward the education of their sons might be successful.

5. The Undertaker

Cooperation with undertakers is necessary for a successful postmortem service. The relatives will usually refuse permission if the undertaker tells them that the postmortem will mutilate the body or that he cannot embalm it properly after a postmortem. On the other hand, an undertaker may secure permission when the physician fails. We have made a great effort in Minneapolis to cooperate with the undertakers. Only two or three now object seriously to postmortems. I have attended their meetings and discussed their objections with them personally. The great majority are anxious to have the good will of the medical profession. Their first difficulty is in learning how to embalm a body that has been examined postmortem. As soon as they can do this well, their main objection is removed. The university extension department offers a six months' course to embalmers, and the students are taught how to embalm such a body. Practically all Minneapolis undertakers can now do this satisfactorily. The pathologists are always careful to leave the vascular system intact as far as possible, so that embalming will not be difficult. Incisions that show on the body after it is dressed are avoided. Whenever embalming does not interfere, we allow it to be done before the postmortem. A kindly personal interview will often clear up disagreements. The postmortem is done as soon as possible in order to give the undertaker time to prepare the body for burial. As a whole, the undertakers are willing to do the extra work required of them for the sake of accommodating the medical profession, and many can be appealed to on the basis of advancing medical knowledge.

6. The Influence of Sex and Age

A study of our records show an approximately equal number of males and females up to the age of 30 years, but after that age the males predominate. In the coroner's service there are three times as many males as females. If only those cases in which permission was necessary are considered, there are about four males to three females in

[1]Read at the Annual Congress on Medical Education, Medical Licensure, and Hospitals of the American Medical Association, Chicago, Feb. 7, 1928.

persons over 30 years of age. It appears, therefore, somewhat easier to secure consent for a necropsy on a man than on a woman after the age of 30 years.

Summary

During 1927, 1,353 necropsies were performed by the department of pathology of the University of Minnesota. Of these, 1,023 were from Minneapolis; and, with the deduction of 123 stillbirths, this represents 19 per cent of the deaths in the city for that year.

The most important factor in increasing the number of postmortems is to get physicians deeply interested. This can be accomplished by a competent pathologist who is familiar with the problems of clinical diagnosis and able to teach.

No postmortem service will be successful if it is in charge of a poorly trained pathologist.

The administrative agencies of the hospitals can secure a fair percentage of postmortems if they really try to do so.

Public sentiment in favor of necropsies can be built up in a community if a majority of the physicians cooperate.

If undertakers are given helpful and considerate treatment, the great majority will not object to postmortem examinations.

The sex of the deceased does not affect the securing of a postmortem examination up to the age of 30 years; but after this age it is somewhat easier to obtain permission in men.

The age of the deceased does not affect the problem of securing permission for necropsy.

The Educational Value of Autopsies[1]

Harvey H. Bemis, M.D., Professor of Physical Diagnosis, Detroit College of Medicine and Surgery, Detroit

THE importance of the educational value of the autopsy is hardly beginning to be realized in this country. The tremendous energy of human endeavor, directed toward inventing and perfecting mechanical devices, has transformed our present civilization and manner of living. If we could but succeed in diverting a part of this attention, interest, and energy into the channels for the promoting of better health and longer enjoyment of these benefits, no doubt much could be accomplished in a relatively short time in medical lines. One of the chief factors in further intensive study would have to be the autopsy and its generalized use, attendance, and study throughout the country.

The usual definition of the word autopsy as a "dissection of a dead body for the purpose of ascertaining the cause, seat, or nature of a disease," falls short, I feel, in expressing the full significance of the procedure. The inadequacies of the definition have recently been met by Karsner who states that an autopsy is "a postmortem examination of the body to determine the pathologic processes present, in their relation to clinical phenomena and history, their interest for the surviving relatives, their importance to the community as a whole, and their value in the study of the cause, processes, and nature of disease."

Long before the time of Herophilus (320-250 B.C.), when we find the first mention made in literature of opening the body for legal or scientific purposes, the Jewish priests are known to have examined the carcasses of animals killed for food in order to detect impurities. It is interesting to note that the first autopsy in the Western Hemisphere was performed with an educational object in view. It appears to have been made in 1535 in Montreal when, during an unknown epidemic, the body of one Philip Rougemont was "ripped to see if by any meanes possible we might know what it was, and to seeke meanes to save and preserve the rest of the company." The heart, liver, lungs, spleen, and thighs were examined. It was the correlation of physical signs and autopsy findings that enabled such men as Auenbrugger, Laennec, Skoda, Bright, Hodgkin, Addison, and others to put the art of clinical diagnosis on a plane which without the disclosures of the autopsy, would have been impossible. The educational value of the autopsy has to be considered in its relation to: 1. the physician; 2. the medical student; 3. the research worker; 4. the relatives; 5. the community; 6. the hospital.

Value to the Physician

Postmortem examinations are widely recognized as a means of advancing our knowledge of disease and are necessary adjuncts to the completeness of each case study. What finer stimulus could we have toward increasing the minuteness of investigation, accuracy of observation, and case histories, than the knowledge that the recorded clinical impressions are to come under the microscopic eye of the pathologist? For here, one learns to rely on certain procedures that have been objectively demonstrated to him as accurate; to look with suspicion on those that are misleading and to discard those that have proved faulty. It is by this means only that we are afforded our opportunities of studying the earliest manifestations of disease, particularly in individuals presumably healthy, but killed by accident. Here also, the normal appearance of the various organs and tissues, necessary to a recognition of morbid changes or slight variations from health can be gained. New anomalies may be found and studied, anatomy reviewed, results of operative procedure noted, and even surgical dexterity can be acquired, by performing surgical operations in selected cases where no visible disfigurement of the body is entailed. There is a clinical tendency of explaining away every physical sign and symptom on a single pathologic basis, where tenable, and the autopsy is the most potent factor in demonstrating the frequent multiplicity of pathologies together with an interpretation and proper evaluation of each.

Value to the Medical Student

The medical student profits by the chastening influence of the autopsy room, witnessing, as is inevitable, the mistakes of his elders and an occasional diagnostic triumph. He obtains an objective first-hand knowledge of the morbid processes caused by disease. Without this, a rational conception of the nature and course of disease cannot be acquired. He is able to recognize the physiologic range of the variation in organs and tissues and, by presenting these various pathologic possibilities, he acquires an anatomical picture which he correlates with his physical findings. By this means, an increasing accuracy of diagnosis, treatment, and prognosis is gained, to be used in his contact with future cases. His decisions are molded, as it were, by the composite mental picture he has formed at the autopsy table with the added stimulus it has afforded for keener interest.

Value to the Research Worker

Medical research of necessity depends on the autopsy for its disclosures and stimulating effect. Conditions observed at the postmortem examination, suggesting definite problems or methods of attack are continually opening the doors into fascinating realms of medical romance; and when entered, discoveries of inestimable value to humanity may result.

Value to the Relatives

It is important, and should be of interest to the relatives to know the cause of death. Apart from the heritable diseases, we see an increasing number of fatalities, the results of infections and indiscretions. What a boon to the survivor it is to obtain this knowledge! Untimely death can so often be avoided by seeking corrective measures, thereby eliminating the mistakes of others.

Value to the Community

The community profits by the increased efficiency afforded its medical men by the autopsy. They are being educated to periodic health examinations, thereby detecting early faults in functions, locating focal infections, and acquiring a training in attention to personal hygiene. The discoveries of vaccines, antitoxins and other prophylactic measures have made it possible to lessen the susceptibility to certain diseases, or to minimize their dangers. Necropsy records furnish the only means of correcting the now unreliable vital statistics, largely vitiated by the inaccuracy of diagnoses entered as the "cause of death" on the records of both our hospitals and state boards of health.

Value to the Hospital

The hospitals, particularly the teaching institutions, where the autopsy is routine, rather than an event of rarity, show an improved morale and greater efficiency of every member. A keener rivalry and increased desire for

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diagnostic acumen is created by the frequent opportunities for checking up one's clinical impressions. So complicated has the complete study of an autopsy become that it is not always possible for the clinician to completely review the results and reap the benefits therefrom. The more modern clinical pathologic conference is a valuable substitute. The procedure we have adopted at Detroit Receiving Hospital, the main teaching unit of the Detroit College of Medicine and Surgery, differs but little from pathologic conferences held elsewhere. Mimeographed copies of an abstract of the case history, physical examination, and laboratory findings are distributed. Copies of these are mailed to the main discussants a few days previous to the conference. After the clinicians have presented their impressions, and before the pathologist reviews the case, the pathologic specimens are passed around as "unknowns." Then follow the pathologic report and a discussion by the pathologist, together with a screen demonstration of the microscopic picture of the important lesions. After this, a general discussion ensues. These conferences are attended by various members of the hospital and school staffs, as well as the students. In this manner, there is a mutual augmentation of knowledge by the correlation of the clinical and pathologic findings. Each conference thus approaches a graduate course, offering concrete clinical knowledge of clinical value.

In conclusion, let me emphasize the necessity for propaganda, all over the country, for a general attendance of autopsies. We are all students of medicine even to the last. I have pointed out the educational value of the autopsy to the physician, the medical student, medical research, the relatives, the community, and the hospital. These interests are so related that whatever helps one helps, at the same time, all others. The physician thus equipped, fares forth with a broader vision. He will be a better diagnostician and safer therapist and will gain a more exalted position in his community than his confrere who neglects such opportunities.

Minimum Procedure Justly Referred to as an Autopsy[1]

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THERE is perhaps no problem relating to medical educational standards more difficult of solution than that of determining the minimum procedure which constitutes an autopsy. The Council on Medical Education and Hospitals has already adopted a standard as to the number or percentage of autopsies required of hospitals training interns. It now seeks to set a standard as to the quality of those autopsies.

Before it is possible to approach a solution to the present question it is necessary that we understand the autopsy. We must know the part taken by it in developing modern scientific medicine. Its value as an educational factor in the present must be appreciated. Its need in developing future medicine must be comprehended.

It is difficult to overestimate the amount of knowledge which has been gained through the autopsy. The basic science of medicine, pathology, owes its development almost entirely to it. And without pathology, there would be little use in studying the other fundamental sciences, anatomy and physiology. Without the autopsy, clinical medicine would still be, for the most part, irrational empiricism, based on blind faith and belief. It has been the one great moving force for scientific medicine as against healing cultism. It will surely, in due time, complete the destruction of all so-called schools and systems of healing. And while it may not be able to place all medical questions in the realm of demonstrable fact, it will tend strongly toward placing all needed empiricism on a rational basis.

At present, the profession does not appreciate the great value of the autopsy as an educational factor. Doctors know in a general way that it has played an important part in developing pathology. It is believed that the knowledge thus gained may be acquired during undergraduate study, that if anything more is needed it can be obtained from books or through other didactic means. It is thought that the problems of medicine can be understood by studying the results of past autopsies. This is a false conception, and next to the natural indifference toward higher standards of medical learning, is the most potent factor that contributes to inferior knowledge.

Positive and Negative Value of Autopsy

The autopsy has a positive and a negative value. Through it we may learn what is and what is not known about disease, both of which facts are essential to sound clinical judgment. Skill and wisdom, as we all know, are acquired through practical experience. This applies particularly to the clinical side of medicine, where the great problem is diagnosis. We are aware that the factor of error in diagnosis by the average practitioner of medicine is tremendously high. It is considerable even by the more skilled, who have at their command modern and efficient means to aid them, and who have had much experience in following their fatalities to the autopsy table. But error is undoubtedly least where the importance and value of the autopsy are appreciated and where it is practiced on a large scale. Our mistakes in diagnosis are in inverse proportion to our experience in following our fatalities, through the autopsy and in coordinating postmortem findings with clinical data.

This is a serious thing, because the doctor who does not practice the autopsy has no way of knowing his mistakes and it is impossible for him to realize their magnitude. The breach between medicine as generally practiced and the possibilities of more scientific medicine is too great, for which there can be no valid excuse.

The negative value of the autopsy is its power for disillusionment. The state of medical knowledge until recently, and the nature of medical practice even today, have been such that a large bulk of the latter is still based on blind belief. The factor of error because of what we do not know is high, but the factor of error in medicine because of what we think we know is much higher. Scientific medicine cannot speak of healing cults, but it must speak of healing cultism, because the thing exists within our profession. In fact the very soil and nourishment of the cult schools is furnished by our own ignorance and irrational empiricism. This will not be otherwise until the autopsy is enthroned in its proper place as the main and central institution of medical learning. Pathologists have stood alone for the past fifty years in giving a proper estimate of its value. The clinicians, who have had the most need of it, have remained almost wholly indifferent to its importance. The proof of this is the extraordinarily low percentage of examinations made in this country—less than one per cent, according to Professor Karsner.

A few isolated clinicians, the outstanding men in their field, have recognized the importance and need of the autopsy, but medical instruction as a whole has failed to do so. The average graduate in medicine of today knows next to nothing about it. Why should he, when he has been taught very little of its value as a means of adding to his knowledge? However revolutionary or impossible it may seem to some, I believe that the freshman on the day he enters his medical course should begin to study disease through the practical application of the autopsy, and he should increasingly study disease in this way to the end of his course. When this is done we may expect to have men come into the field of medical practice with the proper understanding of the absolute need of the autopsy in private practice. That the material is begging for such men is now too well proved to need further argument. I have elsewhere stated that not less than 20 per cent of the dead could be examined for the mere asking. And this rate can be increased according to our desire for getting at the bottom of medical problems. During 1927, I had in my private practice 33 deaths, 30, or 90+ per cent, of which were examined.

Just as the autopsy has in the past played the important rôle in the development of medicine, and just as it provides the most powerful means for present instruction, so will it no doubt, directly and indirectly, have much to do in developing future medicine. Our unsolved problems are still legion and we must look to it for aid in conquering this vast unexplored territory.

When the value of the autopsy in these three places is understood and appreciated, we will be able to approach the problem of determining our minimum procedure. Because whatever the latter may be, it is based on those

[1]Read at the Annual Congress on Medical Education, Medical Licensure, and Hospitals of the American Medical Association, Chicago, Feb. 7, 1928.

three phases. The minimum procedure must study the autopsy in terms of accumulated knowledge gained through past autopsies, for the purpose of increasing the knowledge and skill of the practicing physician, and to contribute to future knowledge.

Significance of Autopsy

What is the autopsy? It is of primary importance to understand that the autopsy comprehends a knowledge of the antemortem phenomena of disease no less than of the anatomical changes which may be found postmortem. Etiology and symptomatology must be understood in order properly to interpret pathologic anatomy. Pathologic anatomy must be understood in order to interpret etiology and symptomatology. How do antemortem phenomena of disease express themselves through anatomical changes? How do anatomical changes manifest themselves during life? The autopsy concerns itself with these two vital problems in medicine. Neither can be understood without understanding the other, and the autopsy alone makes this possible. When this central fact is recognized we begin to appreciate the significance of the autopsy. We see that it is the basic institution of medical learning around which all medical education must be built. When we stop here to reflect that we are at present concerned in establishing a standard as to the quality of the autopsy, we see how important our problem is. That is, the minimum procedure which may justly be referred to as an autopsy must be the standard of all standards of medical learning.

At present, the vast majority of doctors look on the autopsy as a means of deciding a doubtful diagnosis. If it were possible to apply it on the basis of actual mistakes in diganosis instead of merely in doubtful ones it might not be so bad. It would then have a rather wide and extensive application. But, as it is, examinations are seldom made because doctors seldom fail to make a diagnosis, to give the disease a name.

The autopsy has for its purpose more than that of deciding a doubtful diagnosis. It comprehends the fact that few problems in medicine have had their final solution, that most of them remain almost wholly unsolved. Its main object is to learn what can be known about the cause, nature, and processes of disease.

The first requisite for a properly conducted autopsy is a complete clinical record of the case. Much of its value may be lost through insufficient knowledge of the history, the symptoms and other clinical manifestations of the patient. A history of previous diseases is highly essential to an understanding of many pathological processes which are found at necropsy. The anatomical changes found, for example, in many cardiopathies and nephropathies can be explained only by knowing of the diseases which the patient had in earlier life.

The importance to the autopsy of thorough clinical study is shown especially in chronic kidney affections. But witness the unsatisfactory classification of kidney diseases on an anatomical basis. In certain constitutional and metabolic diseases it is very necessary that we have at hand evidence of enlightened clinical study. An examination of the pancreas in diabetes may be wholly negative. Toxic adenoma may cause death without producing visible anatomical changes. Fatal acidosis can be diagnosed only clinically.

These things are mentioned to show how the autopsy is involved in all phenomena of disease as they manifest themselves during life and as they may or may not reveal themselves through anatomical changes found after death.

It cannot be too strongly emphasized that the principal in conducting an autopsy should be the clinician and not the pathologist. The latter describes and classifies anatomical changes, and he may go far in coordinating these with clinical manifestations of disease, but he cannot go the full way. The clinician alone, through his intimate association and close contact with the living patient, is fitted to do this.

Since our minimum procedure, as stated, represents the highest standard of medical education it must of necessity be quite complete. The autopsy proper is divided into three main parts, a consideration of the clinical data, the postmortem examination and the coordination of these two. Before the examination of the body is begun, the clinical findings should be gone over and every possible effort made to determine the probable necropsy findings. The autopsy is completed after all anatomical changes found are coordinated with the clinical data.

Routinely, both major cavities must be opened. The brain must be examined whenever there is clinical evidence of disease of the central nervous system. Organs lying outside these cavities must be examined when diseased clinically. Surgical deaths require special examinations. In malignancy, the seat should be determined and all metastases traced.

A macroscopic examination and diagnosis should be made and the anatomical changes recorded. A microscopic examination and diagnosis must be made of all parts which show macroscopic changes or which showed clinical evidence of disease and the slides made a part of the autopsy protocol. Bacteriologic and serologic examinations must be made whenever they will yield information.

The accompanying chart represents what I believe to be the minimum autopsy procedure. It is self-explanatory. Of course, it is impossible always rigidly to adhere to this formula. But, intelligently administered according to present-day advanced medical thought, it will serve the purpose for which it is intended.

Clinical Data		Routine: Open Both Major Cavities	If Macroscopically or Clinically Diseased	If Clinically Diseased	
Race,		Pericardium		Meninges	
Sex,	Macroscopic examination and diagnosis.	Heart (open cavities)	Weight-meas. (L. T.)	Brain	
Age,	Pathologic changes recorded.	Coronaries	Open main trunks	Spinal cord	
Weight,	Microscopic examination and diagnosis of all parts showing clinical or macroscopic evidence of disease.	Aorta (open to arch)	Open to bifurcation	Sinuses	
Habits,		Pleura		Thyroid and thymus	
Occupation,		Lungs-lobes (cut)	Bronchi (open main trunks)	Larynx	
Family history,			Peribronch. lymph glands	Oesophagus	
History of previous diseases,	Recorded and slides made part of permanent record.	Liver (cut)		Bones	Coordinate
History of last illness?		Gallbladder (open)	Weigh Measure Cystic, hepatic, common D. (open)	Skin	postmortem findings with clinical data.
Subjective symptoms,	Bacteriologic and Serologic examination where will yield information.	Omenta			
Objective symptoms,		Stomach (open)			
Laboratory findings,		Duodenum (open)			
Treatment.		Jejunum Ileum Caecum Colon	Open	Surgical Deaths Emboli Thrombi Bleeding Ileus Peritonitis Hernia Obstruction Injury	
		Appendix			
		Pancreas (cut)			
		Spleen (cut)	Weight-meas (L. B. T.)		
		Kidneys (cut-strip capsule)	Weight-meas (L. B. T.)		
		Suprarenals			
		Ureters	Open		
		Bladder (open)			
		Prostate		Malignancy	
		Uterus Tubes Ovaries	Open	Determine seat and trace Metastases	

MINIMUM AUTOPSY PROCEDURE.

Discussion on Papers of Drs. Bemis, Parnall, Bell, and Smith

Dr. Howard T. Karsner, Washington, D. C.: Associated with the gratification that must be felt in the fact that the Council on Medical Education and Hospitals recognizes the significance and importance of a discussion of this topic, there is a certain vague sense of regret that the great advances in medical science have been handicapped in this country by a backward attitude toward this great tool for the scientific progress of medicine. It is to be hoped that the watchwords "more and better autopsies" may be graven on our collective escutcheon as an indication of our appreciation of the papers which have been so admirably presented. Whether pathology goes forward as a medical science or as a basic science, or as both, has little bearing on the fundamental facts that in order to progress at all it must have autopsies. "As Maine goes, so goes the nation," and, even more truly, as pathology goes, so goes medicine. This refers to pathology in the broad sense, but might well refer only to pathology as morbid anatomy, for morphology is basic in this science. The interdependence of pathology and medicine was prominent in the earlier history of pathology, as exemplified particularly in the work of Morgagni, Rokitansky, Virchow, and others. There was subsequently a drift toward pathology for its own sake, a tendency which is continued today in the movement on the part of certain eminent and thoughtful pathologists who would have the field regarded as a basic science. The vast majority of pathologists hold, I believe fortunately, that pathology is a medical science and by means of consultations with their clinical colleagues and by the well directed clinical pathological conference keep alive and promote that spirit which actuated the founders. There is, however, room enough for all and the basic science advocates have ample scope for their activities and vast opportunities for service. It is, nevertheless, a duty to push ahead the applied science idea and this is a program for all medicine rather than for the pathologists only. The program can be productive only if there is a healthy and hearty spirit of cooperation and mutual confidence. The clinician with ex-cathedra doctrines and the pathologist with the superiority complex have no place in the scheme unless they reform.

The thoughtful devotee of medicine needs no lecture on the educational value of the autopsy. There are, however, those whose energies are so concentrated that they may give this matter little attention. Furthermore, medicine has become so diversified and requires so much aid from nonmedical personnel that it is essential that the laity be informed and, indeed, subjected to sane, well-directed propaganda. It is not to be expected that lay trustees, lay administrators, nurses, social service workers, public health attaches, undertakers, and others can without instruction appreciate the fact, which to us is self-evident, that the autopsy is essential to the advance of medical science. We, who have the evidence, must present it repeatedly and convincingly. Our own conviction must be supported by our actions. Unless we ourselves are willing to be the subjects of what we ask of others, we stand indicted of insincerity, and we cannot win any advance whether the true bill lead to acquittal or not.

The educational value of the autopsy, with its broad implications as to medical science, medical practitioners and students, relatives of the dead, lay associates of medicine, public health and other productive and conserving activities of the community, furnishes sturdy support for any promotion enterprises on which we may enter.

Recently I have placed myself on record as regarding the autopsy as a scientific inquiry based on a complete examination of the thorax, abdomen, head and spinal canal, and such other regions as are necessary. Of the various qualifications, the fact that the autopsy is a scientific inquiry is paramount. Any procedure which has not this feature is not to be regarded as an autopsy. Fundamentally, any restriction of exploration which excludes this feature also excludes its designation as an autopsy. The law, however, may regard any postmortem exploration as an autopsy and we cannot defend a lawsuit by resort to academic technicality. Statistical compilations may be served by deciding what is the minimum procedure justly referred to as an autopsy, but there are often matters of petty local pride rather than of widespread significance. If only one or two organs are examined, the inquiry may satisfy curiosity and indeed give some immediate information of value, but it is hardly a scientific inquiry when consideration is taken of the fact that disease in one organ is reflected in numerous others. Candor compels me to say that the least that can reasonably be regarded as an autopsy is a complete examination of the thorax and the abdomen. To the trained pathologist, that is common sense. If statistics must be compiled, and certainly they have a genuine value, anything less than the procedure just mentioned should be tabulated and indexed as a partial autopsy.

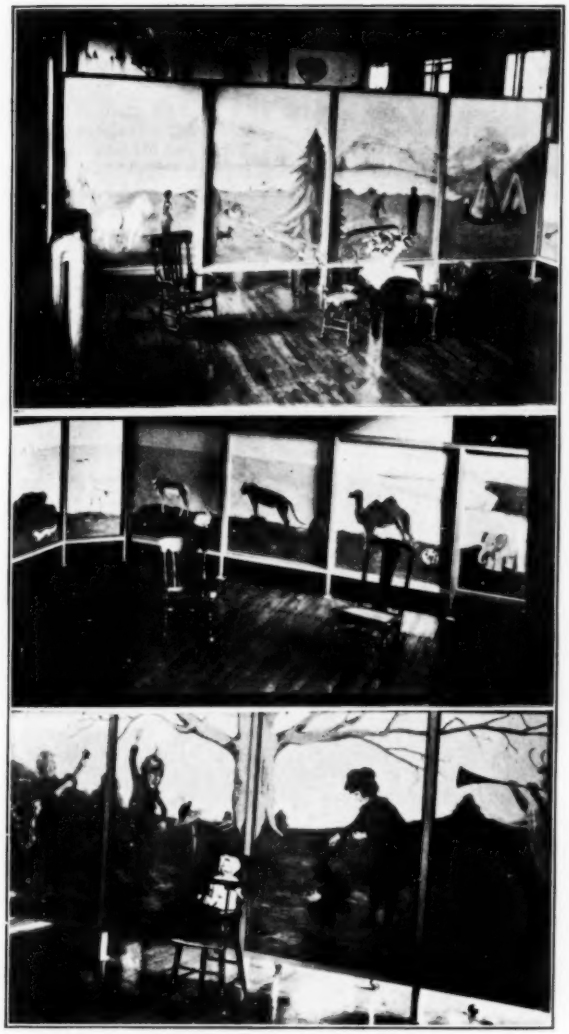
The fact that we have papers on the relationship between the medical staff and the hospital administration in the use of autopsies and on the obtaining of autopsies, valuable as they are and so highly indicative of a keen appreciation of the welfare of medicine is a reflection on the interest of the public in its own good. The laws of a state reflects the general desire of its population. The reason that we discuss these features is a clear index of the attitude of the people, and the laws which they have made are responsible for the situation which faces us. Having established to our own satisfaction the value of the autopsy to education, and its corollary value to the state, we may well inquire as to how far our difficulties are due to existing laws or to personal and group prejudices. It is my opinion that, if the laws were to conform to what we regard as desirable, the prejudices would fall of their own weight. The fundamental difficulty lies in the motivation of the laws. Certain European countries assume that an autopsy will be performed unless specifically forbidden by the relatives, whereas our states assume that an autopsy will not be performed unless specifically sanctioned by the relatives. Until we can alter this conception in our states, we shall face difficulties. Therefore our principal activity must be directed, through education and if need be propaganda, toward the objective of completely inverting an established point of view. There is no question of the propriety of this objective, but in order ultimately to attain it we must have solidarity among ourselves. The greatest possible number of all the physicians in the country must realize with sympathy and concord that the effort is right. Naturally, time will be consumed in the project. In the first place, our criticism of the statutes is general rather than specific because we have not available a compilation of the laws of the various states concerning the matter. Fruitful attention has been given the topic of medico-legal autopsies by a committee of the division of medical sciences of the National Research Council, which has made an enlightening survey; but the civil autopsy has not been covered in a comprehensive manner. In order for us to have a definite point of departure, we must have an examination of the statutes and court decisions in the various states. With this information it should be possible to make recommendations for change. The inversion of a traditional public opinion probably cannot be accomplished abruptly. Temporarily we may need to accept compromises. We should, however, never lose sight of the ultimate objective. The papers here presented help us to meet the immediate situation, but our enthusiasm for overcoming our present handicaps must not divert us from determined and continuous efforts to remove those handicaps. Energy is quantitative and measurable. We must abolish those factors which utilize energy for overcoming obstacles, so as to conserve it for more productive purposes.

In conclusion, let me compliment the Council for introducing this topic into its program, and the speakers for their stimulating presentations, and permit me to express the hope that our conference on autopsies will lead to action for a better future of medicine and medical education in this country.

A NEW PEDIATRIC DEPARTMENT

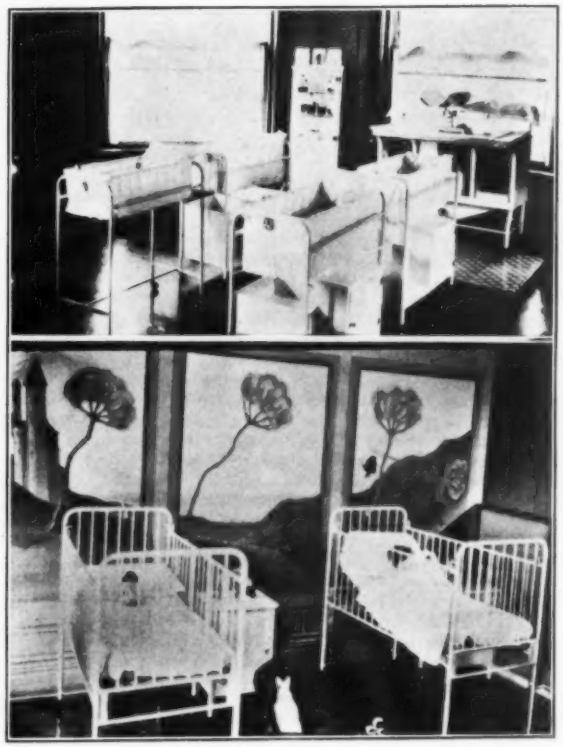
Generous friends of St. Elizabeth Hospital, Lafayette, Indiana, have made it possible for the institution to open a special pediatric department. Recently, a floor separated from the hospital proper was set aside for this purpose. The department is under the direct care of two physicians of the medical staff, who serve alternately in periods of six months each. A Sister R.N. supervisor, assisted by student nurses, administers to the patients.

The pediatric department consists of a waiting room, four wards for patients, and other accessories. To prevent any possible contagion being carried to other wards, one of these rooms serves as a receiving room where children are isolated until the full nature of the case has been diagnosed. Two other rooms are wards of four beds each, for boys and girls respectively. Only children ranging in age from six months to six years are admitted to these.



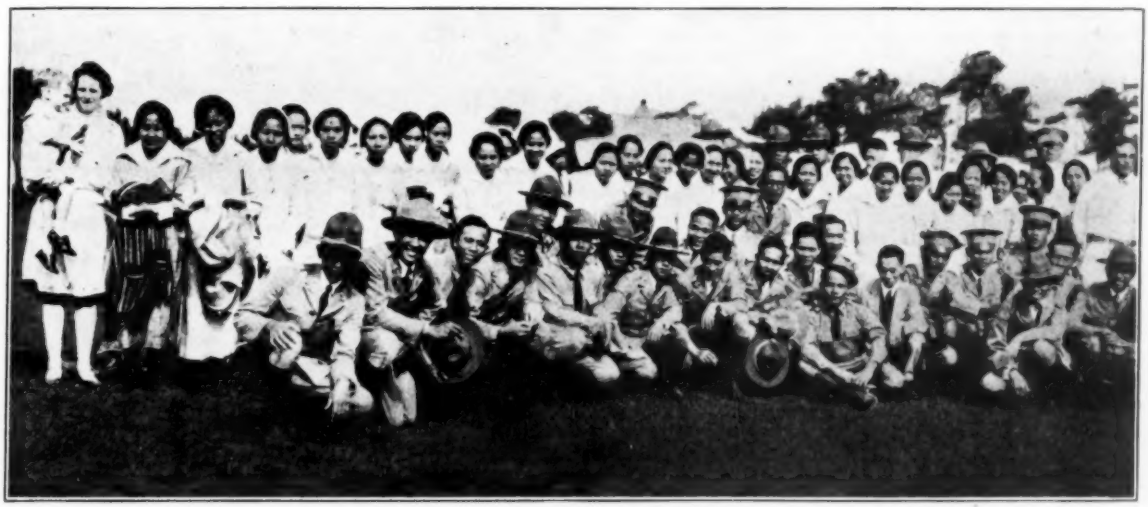
THE NEW PEDIATRICS DEPARTMENT, ST. ELIZABETH HOSPITAL, LAFAYETTE, IND.

The fourth or infant ward is furnished with six bassinets with separate compartments for basins and other essentials. Connected with the wards are a warming oven for blankets; a medicine cabinet, etc.; a kitchenette with a mechanical refrigerator, food and bottle sterilizer, gas oven, tray cabinet, and other conveniences for food service; a playroom artistically and suitably furnished for children. The department also has its own linen room, bathroom, lavatories, and sinkroom.



THE NEW PEDIATRICS DEPARTMENT AT ST. ELIZABETH'S HOSPITAL, LAFAYETTE, IND.

The walls of the entire department are decorated with colored pictures, attractive and interesting to children. These pictures were designed and produced by the art students of St. Francis Normal School.



ANNUAL CONVENTION OF THE PHILIPINE RED CROSS.

Nurses and dentists affiliated with the Philippine Red Cross at Baguio, where the organization held its anual convention. Baguio is a mountain resort near Manila, which has become the hot-weather capital of the Islands.

Of Interest to Hospital Engineers

W. F. Shaphorst, M.E.

Mr. W. F. Shaphorst, M.E., of Newark, New Jersey, has been sending in some interesting items about various points of interest in connection with hospital engineering. We are printing these altogether so as to make it convenient for the readers of HOSPITAL PROGRESS to find and consult them hereafter.

Ammonia Compared With Other Refrigerants

This question is often asked: "Why is ammonia usually preferred as a refrigerant? Engineers prefer it in large refrigerating plants because it is more efficient and more economical than other refrigerants. The table below tells the story in a nutshell. One pound of ammonia, approximately, will absorb 500 heat units. Its closest competitor is ethyl chloride, but 3.24 pounds of ethyl chloride are required to do what one pound of ammonia will do. Next comes methyl chloride which is nearly as good as ethyl chloride. The poorest of all is carbon dioxide, 6.82 pounds of which are needed to do what one pound of ammonia will do. Yet carbon dioxide is commonly used in spite of the high pressure under which it must be operated. This is because of the fact that carbon dioxide has no odor even when it leaks. Consequently, it does not harm food products or irritate human beings. The following table lists the common refrigerants in use and compares them with ammonia:

Refrigerant	Pounds of refrigerants required to absorb 500 heat units
Ammonia NH_3	1
Sulphur Dioxide SO_2	3.4
Isolutane C_4H_{10}	3.9
Ethyl Chloride C_2H_5Cl	3.24
Methyl Chloride CH_3Cl	3.24
Carbon Bisulphide CS_2	3.35
Ethyl Ether $(C_2H_5)_2O$	3.46
Propane C_3H_8	3.67
Chloroform $CHCl_3$	4.54
Carbon Tetrachloride CCl_4	4.89
Carbon Dioxide CO_2	6.82

Carbon Dioxide vs. Ammonia

I am often asked the question, "Why isn't carbon dioxide used more than ammonia?" Many people think carbon dioxide should always be used in preference to ammonia because the former has no odor. Ammonia is poisonous. It will spoil any eatable that absorbs its odor. Carbon dioxide on the other hand can leak in large quantities without being detected.

Unfortunately carbon-dioxide machines are more expensive than ammonia machines. Their first cost is at least ten per cent higher and they require more power to operate them. Only about one tenth of the manufacturers of refrigerating machinery make carbon-dioxide machines. The reason is obvious.

Where cold water is available for cooling, the carbon-dioxide machine does pretty well, as it then requires an average of only twelve per cent more power than the average ammonia machine. But where cold water is not available as in the Southern states, and even in the Northern states, the carbon-dioxide machine requires about 25 per cent more power than ammonia. Besides, a much larger carbon-dioxide machine is required when the temperature of the cooling water falters. Cold water is very important.

In spite of the greater cost of the carbon-dioxide machine, however, and the greater cost of operating it, it is usually given preference in a number of places where leakage of ammonia in large quantities might be serious, as on board ship, in hospitals, theaters, schools, hotels, and so on. Carbon dioxide does not attack metal. Ammonia does attack certain metals such as copper, brass, and most alloys containing copper.

The table below credited to the German authority Dr. C. Heinel, shows in greater detail just where and how much ammonia is superior to carbon dioxide as a refrigerant.

Hospital Refrigerating Machinery

Thinking that the following letter of professional advice may be of interest and value to refrigerating engineers, I am submitting it for whatever it may be worth. The recipient paid the regular professional fee for it, which, of course, was many times greater than the cost of one year's subscription to this publication.

The recipient of this letter had intended to install a refrigerating machine of unproved dependability. My letter prevented the error he would have made and was the means of saving much money and preventing much annoyance for him. The letter with all names removed, is as follows:

"Your letter of February 8th has been referred to me. As I understand it, what you want is my advice regarding the best and most dependable system of refrigeration that you can install, all conditions considered.

"Having been in the business of manufacturing refrigerating apparatus myself and having had an opportunity to look into such matters with unusual care, I happen to know some of the inside facts. My advice to you in view of your present location, is to hook up with a large and responsible manufacturer who has been in the refrigerating machinery business for years. Dependability is a very important factor with you.

"You will appreciate that a large manufacturer is likely to have the most dependable equipment. Because of the fact that he manufactures the best equipment, he has become large. This does not always hold true, of course, but in the refrigerating business I believe it is pretty close to the truth.

"The ——— ——— Company of ——— ———, as I understand it, do not make refrigerating machinery their specialty. They make all kinds of ——— ——— as well as ——— ——— products. I will admit that I do not know anything about their refrigerating machine if they make one, hence I cannot recommend them. It may be that they sell a machine made by someone else. The ——— ——— Company are dependable but they are not very large and because of the fact that their machine is carbonic, I do not consider theirs the best. Their argument is that carbon dioxide is superior to ammonia but, for your purpose, I do not agree with them. The carbon-dioxide system is used successfully aboard ship where ammonia is often considered dangerous. It requires a smaller cylinder than ammonia, has no odor, and is less dangerous to life when inhaled. It costs considerably less per pound than ammonia. However, the manufac-

	NH_3		CO_2	
Condenser Temp., Degrees F	86	68	86	68
Condenser Pressure, Gauge, lb	156	115	1025	811
Evaporator Temp., Degrees F	14		14	
Evaporator Pressure, Gauge, lb	26.8		370	
Evaporator Temp., Degrees F	—4		—4	
Evaporator Pressure, Gauge, lb	12.3		274	
I. H. P. per ton, without subcooling the liquid:				
At 14 deg	1.158	0.824	1.962	1.013
At —4 deg	1.552	1.169	2.63	1.45
Relatively	100%	100%	126.5%	124%
I. H. P. per ton, with subcooling to 59 deg. F.:				
At 14 deg	1.104	0.809	1.208	0.907
At —4 deg	1.49	1.148	1.631	1.300
Relatively	100%	100%	109.5%	113.3%

Dr. C. Heinel's table comparing refrigeration qualities of ammonia and carbon dioxide.

turers of ammonia machines have advanced to the point where you needn't worry about the danger of ammonia any more. A disadvantage of carbon dioxide is the very high pressures that must be used. Extraordinary care is necessary to prevent leakage. You are unable to smell carbon dioxide, hence it is likely to leak out without your knowing it. You can easily detect any ammonia leakage by the odor, and it is easier to stop than carbon dioxide because the pressure is much lower. As a result a small leak in a carbon-dioxide system may rapidly cause the loss of all of the carbon dioxide. This loss usually more than counterbalances the difference in cost.

Besides, it has been proved that carbon dioxide is less efficient than ammonia. A large number of tests under various conditions of operation show that carbon dioxide is only 86 per cent as efficient as ammonia.

The ——— ——— Company manufacture a machine that has not yet passed through the experimental stage. I have examined results of tests on this machine and it is not efficient. It is more or less a freak machine. It has some good talking points and so has the ——— system of refrigeration but I cannot recommend either of these.

The ——— ——— ——— Company are large and dependable and I would rate them as being my second choice. They have ample financial backing. You can put your problems up to the ——— ——— people and be pretty sure of getting first-class advice and service.

The ——— ——— Company of ——— ——— would be my first selection for you. They have branch offices all over the United States and their prices are generally reasonable. After one of their plants is in operation, the chances are that you will seldom if ever require the services of one of their experts. I know that they have many installations in your state so you could easily investigate their machines should you wish to do so.

"Get comparative prices and advice from these three and I believe you can decide for yourself which system you want. They are all, large financially sound concerns, with broad refrigerating experience, and they will live up to any guarantee you may be able to get out of them. If you should care to have any further assistance from me, I will be glad to give it.

"For this information I will be glad to have your check for ———. I could go into further details and work out a plant for you but of course that would require considerable time and you can get good dependable service from the above manufacturers anyway.

"Should any further questions come up, should you want me to read over the proposals by the above concerns, or anything like that, perhaps I can be of further service."

Save the Drops

It has often been written that little is known about the amount of lubricating oil that should properly be used in a steam engine. How many drops per minute is the correct number? One or ten? How can anybody be sure? One drop per minute may not be enough in your engine. Ten may be too many. It is impossible to look inside an engine and actually see what the lubricant is doing, and even then we could not be sure without a test of some kind. A good test for determination of the correct amount of lubricant is the "flywheel test."

While feeding, say, 10 drops of oil per minute to the cylinders, just after a long run, and while running at normal speed, throw off all the load from the engine. Then suddenly close the steam valve. The flywheels will cause the engine to continue to run for some time, and that is an important factor. How long does it take the flywheel to stop? By use of your watch you can find the time to the second. Make note of the time required to stop from the instant the steam valve is closed until the engine stops "dead." Do it carefully.

Next time try 9 drops of oil per minute, but do not allow any other condition to be changed. If the stopping time is the same, you may as well save 60 drops an hour, 600 drops a day, or 18,000 drops a year. Then try 8 drops, 7 drops, 6 drops, etc. Finally, use the least number which permits maximum stopping time. Judgment must be used with this test, of course. Do not choke down the lubricant until the cylinder is liable to be ruined. But as long as the stopping time is at its highest you can feel certain that the cylinder is well lubricated.

To be sure this test is not applicable or practical in every plant but I hope it may serve as a good suggestion so that many drops and much money will be saved.

Boiler Tube Buckling

Engineers have observed and made note of the fact that when the tubes in water-tube boilers buckle, they usually buckle upward, while in fire-tube boilers they buckle downward.

There are a number of good reasons why the tubes buckle in this way. In water tube boilers, the scale, if there is any, usually lodges on the bottom of the tubes and forms an insulation between the water and the source of heat. Consequently, the lower side of the tube is overheated. The tubes that are higher up in the tube bank are not so hot, consequently, they hold the boiler heads together, and as a result the overheated tube is in compression. This compressive force naturally causes the tubes to buckle upward because the lower side is the weaker side being so much hotter than the top side.

At the same time it must be remembered that the lower side of the tubes in a water-tube boiler are hotter than the upper side because the heat comes from below, and the lower surface of the bottom tube is in "full view" of the hot fire in the furnace. On the other hand, in fire-tube boilers the scale forms on the outside and on top of the tubes. Heat is most intense on top because heat always goes upward. Therefore, for reasons similar to that explained above the tubes in fire-tube boilers buckle downward. The top is weaker than the bottom.

Other things that no doubt have considerable influence in many boilers are soot and ash. In water-tube boilers soot and ash have a tendency to settle on the tops of the tubes, thus giving us an insulating effect there. That is, the heat is kept away from the tops of the tubes. This increases the tendency to buckle upward, the soot being on the outside of the tube while the scale is inside, the soot keeping the heat away from the tube and the scale keeping the heat away from the water.

In fire-tube boilers the soot is inside the tubes, at the bottom, and the scale adheres outside the tubes, at the top. Hence, the higher temperature attained by the tops of the tubes in fire-tube boilers. This, it seems to me, covers the reasons pretty completely as to why boiler tubes buckle as they do. Not much room is left for argument.

An Important Legal Point

Let us suppose that you buy a machine and find it unsatisfactory. It does not answer your purpose. You therefore notify the one from whom you bought the machine to take it away. The question is: Have you the right to continue using the machine after you have rejected it? The possibility of legal entanglement to a buyer of machinery or any other equipment under such conditions should prompt him to carefully read the sale contract.

It is a mistake not to read an important contract. In some instances, even after reading the contract, a buyer takes too much for granted. He probably gets the idea that he apparently has the advantage, and feels that he may be able to "put something over" on the seller. Where this is attempted he sometimes encounters an important point that he had not expected and finds that it would have been better for him if he had taken the contract to mean exactly what it said. Contracts are usually so worded that anyone of ordinary intelligence can fully comprehend their meaning. As an illustration, here is a case that happened in one of the Western states:

A bought a piece of machinery from B. The contract allowed him to give it a tryout for a certain length of time to enable him to determine whether or not it would answer his purpose. At the expiration of this period if it did or did not meet the requirements he was to notify B in writing.

He gave the machine a trial and decided that it would not do. He notified B, but continued using the machine. Presently B called on him to pay for the machine but A declined saying that his notice as per contract that the machine would not answer his purpose released him from the contract and that he was not under any further obligation to pay.

B brought suit for collection. The courts held that A's continued use of the machine had rendered void the rejection clause in the contract and constituted his acceptance.

In the light of these facts it is obvious that where a purchase is made with the right to reject after a trial, the buyer should be cautious in the use of such machinery after rejection. You may have no right to use it.

It is also obvious that in such a situation if the buyer should for any reason desire to use the machine after rejection, he should get permission to do so from the seller, under another contract. Or, he should be careful to have such permission written into the original contract before signing.

Even though the machine is unsatisfactory to a buyer, its temporary use after rejection is often absolutely necessary.

No Service Required

I overheard what I consider a "good one" at the last power show. A visitor was asking questions and the exhibitor was answering as glibly as the visitor was asking them. But suddenly the visitor asked, "Do you give service to purchasers in case something should go wrong with your machine?"

The exhibitor didn't reply so readily. He hesitated a moment and then said, "This machine never gives any trouble. There is nothing on it that will ever go wrong. But we have a completely equipped service department to take care of customers in case anything **should** go wrong."

Does it seem exactly consistent to maintain a fully equipped service department that has never been called upon to do anything? I say "nay, nay." For example, have you ever heard of anybody maintaining a fully equipped department to make the sun rise every morning and set every night?

My belief is that extravagant claims don't pay. If a thing gives trouble, admit it. The other fellow is more likely to believe you if you admit trouble than if you deny it. A good friend of mine who manufactures automatic machinery told me not long ago that in all his years of experience making automatic machinery he has never yet seen the machine that is real 100 per cent automatic. Sooner or later they all require human attention.

When Pouring Babbitt

A little over twenty years ago the late O. N. Trooien, who gave promise of becoming a great engineer, was babbitting some bearings. I was assisting. He was pouring the molten metal and I was holding the forms and observing closely. Suddenly there was an explosion and hot metal was blown into one of my eyes. Fortunately for me nature was kind and placed a new skin over my eye in about a week removing all traces of a nasty burn. Many others have not been so lucky. Moral: Before pouring hot metal into **any** vessel, mold, form shape, or **anything**, be sure that there is no water or moisture present. Enough moisture was present in the above mold for the sudden generation of steam. It was the steam that blew the metal into my eye. Whenever possible, **heat** the bearing before pouring the metal, thus driving out all moisture.

BACTERIA IN EXTIRPATED TONSILS
(A Study of 214 Cases)

Sister M. Amadeo, C.S.C., Technician in the Pathological Laboratory of Mt. Carmel Hospital, Columbus, Ohio

The tonsils have long been known to be the source of entry of bacteria, becoming primary foci, causing several acute and chronic infections. Micro-organisms gain access through the crypts or broken mucous surfaces, and produce localized infection frequently without definite symptoms. However, from such foci micro-organisms may enter the lymph or blood stream and be carried by these channels to related or distant organs where they produce infection of a much more serious nature.

A variety of micro-organisms, including streptococci, pneumococci, staphylococci, and micrococcus catarrhalis, may be responsible for the primary foci. Of these the streptococci seem to be the most important, since they have been found much more frequently by all research workers. Moreover, streptococci have been isolated in pure culture from foci of secondary infection, such as the lesions produced by acute rheumatic fever on the heart valves and in the joints, as well as gastric ulcers, and diseased mucosae of gall bladders and appendices. Hence, the importance of treatment, if not eradication of known or suspected primary foci of infection.

In consequence, it is always of interest to study the bacteriological findings in a representative number of excised tonsils. The cases chosen for the subject of this article are those of known hypertrophied or septic conditions, the tonsils having been cultured immediately after extirpation. The cultures were secured from each tonsil separately by searing the surface, cutting with a sterile knife, and obtaining material either from the depths of the crypts, apparent abscessed areas, or both. They were planted in plates on beef-infusion agar enriched with human blood. Since the tonsils were cultured separately, this paper includes the study of 426 tonsils. Of these, 212 showed pure cultures, the remaining, two or more organisms.

Table I shows the numerical and percentage incidence of the organisms obtained from those showing pure culture.

Table I. Organisms Obtained in Pure Culture

Organism	*Numerical Incidence*	*Per Cent Incidence*
Streptococcus Viridans	78	18.3
Streptococcus Hemolyticus	40	9.4
Streptococcus Anhemolyticus	13	3.0
Staphylococcus	54	12.6
Mic. Catarrhalis	19	4.4
B. Coli	3	0.7
Mic. Tetragenus	2	0.5
B. Fecalis Alk	1	0.2
Diptheroids	1	0.2
Dip. Crassus	1	0.2

According to these findings the streptococcus viridans occurs by far the greater number of times. The staphylococcus, while not usually considered a factor in the production of tonsil disease, occurs frequently enough to seem to have some influence. The micrococcus catarrhalis, micrococcus tetragenus, diplococcus crassus, and diphtheroids are considered usual normal inhabitants of the mouth and may have been merely accidently present. The pathogenicity of B. coli in the tonsil is questionable; but since the B. facalis alkaligenes is frequently isolated in pure culture from draining ears, it may be a factor, though a rare one, in the etiology of tonsillar disease.

Table II shows the total number and percentage incidence of the organisms obtained.

Table II. Total Number of Organisms Obtained

Organism	*Numerical Incidence*	*Per Cent Incidence*
Streptococcus Viridans	168	39.4
Streptococcus Hemolyticus	89	20.9
Streptococcus Anhemolyticus	54	12.6
Staphylococcus	170	40.0
Mic. Catarrhalis	42	10.0
Pneumococcus	4	0.9
B. Coli	5	1.1
Mic. Tetragenus	2	0.5
B. Fecalis Alkaligenes	1	0.2
Diphtheroids	3	0.7
Dip. Crassus	1	0.2
Mic. Pharyngis Siccus	4	0.9
Friedlander's Bacillus	3	0.7

Here again the streptococcus viridans far exceeds the streptococcus hemolyticus, practically doubling it in percentage incidence. The total number of times the streptococcus (all types) occurs is 311 or 72.9 per cent.

In one instance, one tonsil of a pair showed the streptococcus hemolyticus, the other the streptococcus viridans, each in pure culture. In six instances, the streptococcus hemolyticus was found in one of a pair, and the streptococcus viridans in the other, but associated with other organisms. In three instances, the streptococcus hemolyticus and the streptococcus viridans were obtained from the same tonsil; in one case of which these organisms were associated with others. There is one instance in which the streptococcus viridans and the pneumococcus were found in both tonsils of a pair unassociated with other organisms. Three tonsils showed no growth.

A Sanitarium Opportunity

In the heart of the Blue Ridge and Big Smoky Mountains, within a stone's throw of where the Dixie Highway runs to Asheville, North Carolina, bounded on the other side by the tracks of the Southern Railway, where each day pass some twenty trains from north and south, from east and west, between these great arteries of communication between the north and the south, there lies a region of hot mineral springs whose health and restorative properties have up to this time been only very scantily utilized.

In a beautiful country of mountains and springs, on the banks of the French Broad River, with mountain trails winding hither and yon, and an abundance of sunshine and clean mountain air, Hot Springs, North Carolina, seems very well situated to become a place of national pilgrimage for those in search of convalescence and health. At the present time the field is quite a virgin one and it seems to offer to one of our communities of Sisters an excellent opportunity for opening a Sanitarium, wherein the health-giving powers of the springs can be utilized for suffering humanity.

So far as the springs themselves are concerned a very detailed account has been given of them by William Edward Fitch, M.D., in his book "Mineral Waters of the United States and American Spas." On the title page of this book Doctor Fitch's qualifications are given as follows: "Member of the International Society of Medical Hydrology; Late Major Medical Corps, U. S. Army; formerly Lecturer on Surgery, Fordham University School of Medicine, Assistant Gynecologist, O.P.D., Presbyterian Hospital; Attending Physician Vanderbilt Clinic, College of Physicians and Surgeons, New York City, and he is at present with the Buffalo Lithia Springs & Hotels, in Virginia." In his book he gives the following account of Hot Springs, North Carolina:

"Post office: Hot Springs. Location, 3 miles east of the North Carolina and Tennessee boundary line; west of Raleigh, the capital city, 311 miles west of Greensboro, 230 miles; northwest of Asheville, 40 miles; east of Memphis, Tenn., 400 miles. Situation: in the heart of the Blue Ridge and Big Smoky mountains, on the banks of the French Broad River, at an elevation of 1,324 feet above sea level; surrounded on all sides by precipitous mountains, save the gorge and valley, where the French Broad River has worn its pathway. The mighty glacier which once went winding, crushing and cutting its way down, forming the bed of this romantic mountainous stream, has written its record deep in the granite faces of the majestic mountains, which looked down in solitary silence upon the terrific devastating forces of nature, still revealed in the massive giant boulders piled upon their sides and in the scratched or polished surfaces of stone strewn along the bed of this mighty turbulent stream. But today there is no suggestion of the chaos and desolation of those days of the birth of this rough and rugged region of mountain fastnesses, with its varied scenes of natural beauty and weird grandeur. This beautiful picturesque panorama of precipitous mountains, rugged hills, stony cliffs and mountain fastnesses, presents scenic vistas unexcelled in any section of this country. There are some 43 peaks in this

SCENES AT HOT SPRINGS, NORTH CAROLINA

The Town of Hot Springs.
Scene From the Dixie Highway.
The Pisgah Range.
The Dixie Highway.
Broyle's Road.
Pisgah Forest Reserve.
Berchmans Hall.
A Mountain Trail.
New French River.
The River From Broyle's Road.
A Mountain Stream.
View From Rich Mountain.

—Photos by Father Garesché.

region, whose pinnacles exceed 6,000 feet in altitude, comprising the most stupendous mountain grandeur east of the great Rocky Mountains, some of which present a sheer perpendicular of naked rock, 1,800 feet in height; otherwise the mountains are covered with a deep soil and clothed with massive forests to their tops.

"Access: Via the Southern Railway, which delivers passengers (through trains from the north, south, east, and west) to the station within the grounds. (The new Dixie Highway, cuts the grounds in two.)"

Here is given the description of the "Mountain Park Hotel," later destroyed by fire: "The scenery surrounding the beautiful landscaped park, in the midst of which is situated the hotel and springs, is so charming that it is often given the appellation of The Switzerland of America. During the world war the Federal government took over the property and used it as a camp to intern officers who were enemy prisoners of war. There are some 20 or more hot springs in this area, ranging in temperature from 30 degrees C. (96 degrees F.) to 40 degrees C. (104 degrees F.). They form one of only two groups of thermic springs east of the Mississippi. The analyses below show the mineralization of a few of these thermic springs.

Hot Springs

Medicinal Classification:

Bathing Spring: Weak calcic sulphated 2 or (—CaS_2). This is a moderately mineralized, thermic, calcic, sulphated, and muriated saline (potassic) water, sulphuretted.

Drinking Spring: Weak calcic sulphated or (—CaSa). This is a moderately mineralized, thermic, calcic, sulphated, and muriated saline (potassic) water, sulphuretted.

Warm Spring: Weak total mineralization 2 or (—T2). This is a moderately mineralized, thermic, sodic bicarbonated, and muriated alkaline-saline water, carbondioxated.

Hot Spring: Weak calcic, sulphated or (—CaS), thermic. This is a moderately mineralized, thermic, calcic, and magnesic sulphated saline water, sulphuretted.

In the past these waters have had quite a reputation in the treatment of diseases of a chronic nature, rheumatism and arthritic joint disturbances, chronic skin diseases, and in disorders of the gastro-intenstinal tract, diseases of the liver and gall ducts. The hot baths administered here afford relief in many cases which have resisted the therapeutic effects of the ordinary galenical medicines. With the delightful mountain scenery, its exhiliarating climate, its thermic waters, combined with hospitable and scientific management, this resort ought to become one of the great spas of the country."

Not only would a sanitarium in such a location promise good results in health, but it would also serve as a very pleasant place of rest and recuperation for the Sisters, while a nurses' home and sanitarium, so much needed in our country might be made an adjunct to it. At the same time a great deal of spiritual good could be done in the neighborhood. The mountaineers are very simple and primitive folk, many of them almost destitute of material and spiritual aid.

At the present time the hotel, which was a feature of the place for a number of years, has been burned down. A small building was erected as a sanitarium, but is inadequate for the real needs and opportunities of the place. A large, well-equipped building should be erected, and many acres of ground are available for its surroundings and for recreational facilities.

Editor's Note: We should be glad to hear from those communities who are interested in such a project and to put them in communication with those who are planning to develop the resources for Hot Springs.

Chemical Analysis of Hot Springs Water

	Parts per 1,000,000			
	Analyst, Chandler & Pellew		Analyst, Prof. E. Adelmarth	
	Bathing Spring	Drinking Spring	Warm Spring	Hot Spring
Potassium chloride (KCl)	5.30	8.56	.....	.....
Sodium chloride (NaCl)	15.57	18.82	40.09	.....
Magnesium chloride ($MgCl_2$)	3.76	6.33	.....	34.08
Calcium chloride ($CaCl_2$)	107.81	152.96	195.42	51.47
Potassium sulphate (K_2SO_4)	6.16	0.04	.....	.....
Sodium sulphate (Na_2SO_4)	154.50	152.27	72.55	.....
Magnesium sulphate ($MgSO_4$)	22.93	139.10	130.72	123.33
Calcium sulphate ($CaSO_4$)	699.46	693.63	.....	300.45
Sodium bicarbonate ($NaHCO_3$)	.....	.....	102.00	.....
Ferric oxide (Fe_2O_3)	.....	.....	40.03	.....
Sodium silicate (Na_2SiO_3)	51.16	54.40	.....	.....
Calcium silicate ($CaSiO_3$)	102.32	108.82	.....	.....
Silica (SiO_2)	.....	.....	65.36	.....
Total Solids	1,231.97	1,342.93	647.17	514.33
Temperature, Degrees Centigrade	30	32.8	36.2	40

ART ACADEMY AND ART MUSEUM AT CINCINNATI, OHIO

How It Is Done

HOW WE HAVE INCREASED ATTENDANCE AT STAFF MEETINGS

The following valuable contribution comes from Mercy Hospital, Oshkosh, Wis.

The question of getting the members of the staff to come to the meetings has always been more or less of a problem. Mercy Hospital, Oshkosh, Wisconsin, has, to a certain extent, overcome this difficulty. A luncheon is served to the members of the staff at noon and the meeting follows this. The surgeons usually spend all the morning at the hospital, and, therefore, it is easy to get them to go to the staffroom at noon. The physicians who have morning office hours have to leave their offices to go home to lunch, and so it is not difficult to get them to come to the hospital. A plate lunch is served, which always pleases them, as they do not have to wait to be served.

The business meeting follows the luncheon. Minutes of the previous meeting, old business, new business, and any suggestions as to changes are made and referred to the various committees. The various departments are represented and are able to defend themselves if any unjust criticisms are offered. The supervisors of the school of nursing are also present and are anxious to hear constructive criticisms of the nursing work.

At the meeting of May 10, a very interesting case was discussed. One of the physicians reviewed the case and brought out helpful suggestions as to the detailed manner of keeping the records. The case under discussion was a round-celled sarcoma, which was further discussed by the surgeon who had operated upon the patient. A round-table discussion of other sarcoma cases followed. A critic is appointed for each month, and the most interesting case of the month is chosen for these meetings. Anyone present is privileged to ask questions concerning the case under consideration, the interns and supervisors often giving valuable information.

Having the meetings at noon instead of in the evening as previously held, makes them short, "snappy," and to the point. All of the physicians are anxious to get the routine measures attended to as soon as possible, and no time is lost in disposing of business matters. Having these informal luncheons has done a great deal toward furthering good fellowship and congeniality among the members of the staff. Very few of the members are absent, while previously it was rather difficult to conduct the business because of lack of a majority. It has proved such a success that the director of the hospital is more than pleased to go to the extra expense and inconvenience of serving the lunch.

A SCHEME FOR NURSING EFFICIENCY

Here is a plan for efficiency and economy in the administration of utilities and nursing supplies. The scheme is carried out and found satisfactory in a 100-bed hospital, St. Leo's Hospital, Greensboro, N. C., operated by the Sisters of Charity. The basis of the scheme is, in one word, Centralization.

A utility room located as centrally as possible, convenient to elevator, stairway, and phone service, is furnished with instrument sterilizer, autoclave, tanks of hot and cold water, and press for reserve supplies. On a wall are long shelves, 18 in. wide, and on the shelves are many white enameled trays, each completely equipped for certain kinds of treatment, the number of each kind is determined by necessity. There are lavage trays, enema, physical examination, catheter, surgical dressings, throat, eye, hypo, and thermometer trays.

This entire equipment is sterile and ready for immediate use, the dressing trays having the special articles known to be desired by different surgeons. When a surgeon enters the hospital he asks for the tray he needs, dressing or otherwise, and in a few minutes the nurse has it at the bedside, the phone and elevator assisting in quick service.

A box containing narcotics, ampoules, and such drugs as digitol, caffeine, etc., is kept in the utility room, and these drugs are dispensed on presentation of a doctor's prescription. The hypo is there prepared and handed to the hall nurse for administration. The narcotic box is replenished by the pharmacist, who takes a daily record of its contents.

In a nearby room, adjoining if possible, all surgical supplies are prepared by probationers; in this room are kept hot-water bags, ice caps, air cushions, bandages, and articles necessary for turpentine stoups, for mustard, flaxseed, or other poultices, and these last named are there prepared and handed out on demand.

For successful operation of this plan, a nurse must always be in the utility room both day and night. This can easily be arranged with the three shifts of eight-hour duty. All orders and articles for hypodermics, poultices, stoups, and hot packs, are received and filled immediately by the nurse in the supply or utility room. Her name and the location of her patient is given by the nurse bringing the order, and she is obliged to return the tray or bag, etc., intact, and be credited for it by the utility nurse. This nurse resets the tray with sterile articles, and places it on the shelf ready for another service. In this way everything is kept in order, and any loss or breakage can be noted.

A receiving room is located near the ambulance door, and here all patients are examined, temperature and pulse recorded on chart with name, residence, etc., and after a thorough cleansing bath are taken on stretcher to the bed assigned, or if an accident case, to the operating room. The clothes of the patient are listed and locked in metal lockers near the room.

To carry on the plan of centralization, the hospital has a central linen room to which all laundry is delivered. The woman in charge attends to all mending, and on receipt of a daily requisition slip, she sends to each hall, in a basket marked with number of the hall, the linen it requires for the day and night.

Another room contains household supplies, such as soaps, paper, brushes, brooms, etc., and these, again by means of the requisition slips, every Monday morning are given out for the week. Surgical supplies also are there requisitioned, and broken or worn-out articles of all supplies are shown as evidence of need.

The advantages of this system are many: The physicians and surgeons are served promptly, treatment orders are carried out without delay, and all articles are carefully and certainly sterilized. The hall nurses, relieved of this work, have more time for active attendance to the sick. There is a great saving of all hospital supplies, waste is lessened, instruments are cared for by dry sterilization and do not rust, rubber articles are not neglected, and, therefore, last longer, and the nurses learn to be careful and conscientious in the important duty of sterilization, and of economy in hospital supplies.

Checking Articles Dispensed

Each morning two probationers with the supervisor of the utility room, check, clean, and replenish each tray separately. The check is made from the printed list on which is enumerated every article on every tray as well as the number of solution bottles, sterile 24-hour specimen bottles, ice-cap covers, sponge, compress, towel covers, etc., in the equipment.

The utility-room nurse gives the tray or article directly to the person who is to use it; hence, that person after taking the tray, which she examines before leaving, is entirely responsible for everything that was on that tray when she received it. The name of the nurse and what was given her is recorded each time, and the tray when returned examined, replenished, and returned to its place ready for immediate use again.

Any breakage is recorded at once in a book kept for that purpose, and replaced so that no tray may be put away incomplete.

At the end of each month the superintendent takes inventory with the nurse in charge, and gives to the bookkeeper the list of breakage with the name of the person, whether doctor, graduate, or student nurse, who broke the article, and that person pays for same. In this way the upkeep of the equipment costs nothing, except for rubber tubing, which must be occasionally changed, as enema cans, douche cans, etc., are boiled for five minutes after each treatment. Ice caps and hot-water bags are immersed in a 5-per-cent solution of Lysol, dried, and hung up until again needed; a clean flannel cover is supplied for these bags each time they are given out, so the cover is never left on from one patient to another. This is all very simple after once established, if regular supervision is made.

We find that this scheme possesses many advantages. It teaches the nurses in charge of the room to keep careful watch over articles, as they must replace anything for which they cannot account. There are three nurses on duty in the 24 hours, and they must make themselves absolutely responsible.

The probationers, by assisting, and filling empty covers, become thoroughly familiar with the entire equipment, as well as the method of caring for same. This has proved a great advantage both to the supervisors on the various duties, as well as for the probationers, and last, but not least, for the patient.

DEPARTMENTAL WORK IN A SMALL HOSPITAL

One of the biggest problems of the small hospital, remarks Sister M. Alexia, superior of St. Joseph's Hospital, St. Charles, Mo., is due to the fact that frequently there is not enough work in a given department to keep a trained worker busy. Still, the patients should have the same advantages as if they were treated in a larger hospital.

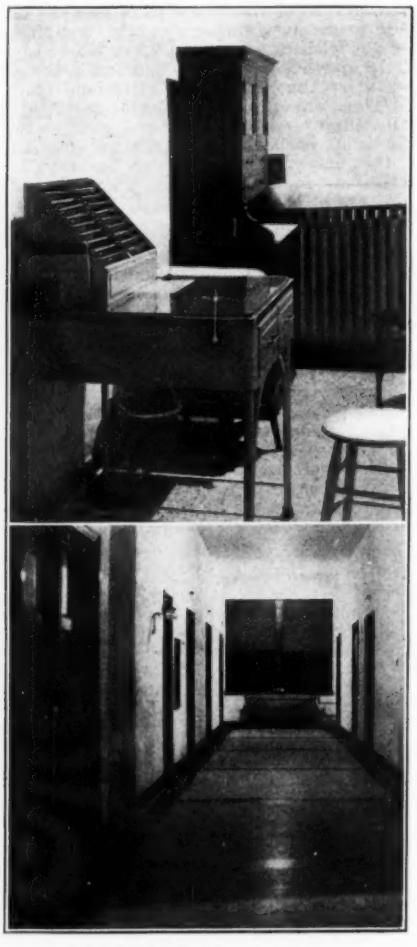
This problem is solved for the laboratory and X-ray departments at St. Joseph's Hospital by having one Sister who is trained for both departments. She does all the usual laboratory examinations; i.e., blood, urine, etc., and the staining of tissues. The latter are sent to a pathological clinic for diagnosis.

The Sister in charge of the two departments takes all the X-ray pictures and a roentgenologist comes from St. Louis once a week to interpret the pictures; the more particular cases are left for this day. The X-ray department has equipment (including a portable machine) sufficient to handle everything except X-ray treatments. During the past year, 678 X-ray examinations were made and 3,285 laboratory examinations. If the work of these two departments continues to increase at the present rate, it will be necessary soon to have a separate technician for each department.

At the above hospital the Sister in charge of the office also files the records.

HOT MEALS TO PATIENTS

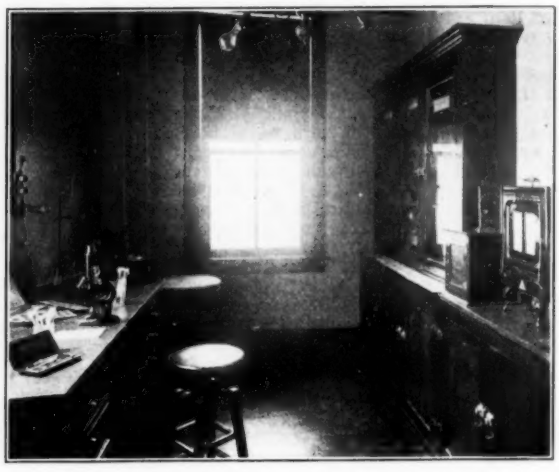
At St. Joseph's Hospital, St. Charles, Mo., there are small steam tables on each floor to heat the dishes and keep the food hot while it is being dished out. The hot food is covered on the tray and the trays are carried singly to the rooms. They are collected from the rooms on the dish truck.



RECORD CABINETS—CORRIDOR,
ST. JOSEPH'S HOSPITAL, ST. CHARLES, MO.

ILLUSTRATED LECTURES

The staff doctors at St. Joseph's Hospital, St. Charles, Mo., relieve the monotony of their meetings by bringing in someone, occasionally, to give an illustrated lecture.



LABORATORY, ST. JOSEPH'S HOSPITAL, ST. CHARLES, MO.

WHAT STAFF MEETINGS ACCOMPLISHED

A. L. Nickerson, M.D., Secretary-Treasurer, Staff of St. Mary's Hospital, Kankakee, Illinois

The staff of St. Mary's Hospital was organized four years ago with about 50 members, just after a new addition of 50 beds had been added to an institution that had functioned some 30 years. It was up to the newly appointed executive committee to hold monthly meetings and see that the members enjoyed them. But how to do it?

Few persons take well to discipline. The doctor seems to resent it more than any other individual. Theoretically, it is much better to try to live up to principles than to obey rules, but to succeed, every organization must have both. Like all similar institutions, we have among our membership the young and the old, country and city, specialist and general practitioner, progressive and drifter, the office seeker, the limelight lover, and the retiring. Consequently, we have had all the petty difficulties and annoyances that others have experienced. The average doctor does not relish criticism even when constructive, nor any inspection or supervision of his patient.

For two years our programs consisted of a 6-o'clock dinner furnished by the Sisters, followed immediately by a business session. The remainder of the evening we devoted to discussion of the deaths that had occurred during the previous month. Our attendance averaged 66 per cent and the work in the hospital soon began to improve, as demonstrated by fewer normal appendices removed, much better histories kept, more accurate and complete diagnoses made, increased work in the hospital, and a greater demand for laboratory help of all kinds. The number of consultations has increased. Work never before attempted in this institution has been developed and accomplished successfully. But best of all, those depressing fears of criticism, antagonism, ready resentment, suspicion of motives, and all the other motley sentiments, are fast giving way to confidence and cooperation.

During the past year, considerable interest has been aroused by the Cabot plan of diagnosis. Cases that the postmortem has shown were wrongly diagnosed during life are written up in detail, giving all the data known before death. A copy is presented to each member present, who is requested to write his diagnosis on a slip of paper and hand it in. After all have responded, the pathologist reads his findings. The collected diagnoses are placed on a blackboard.

We have difficulty in getting doctors to present clinical cases. A very interesting case of leukemia was presented at our last meeting. We hope for greater success along this line later on.

We are constantly urging more postmortem examinations. To this end we had Dr. J. J. Moore of Chicago, talk to us at our last County Medical Society meeting,

(Continued on Page 42a)